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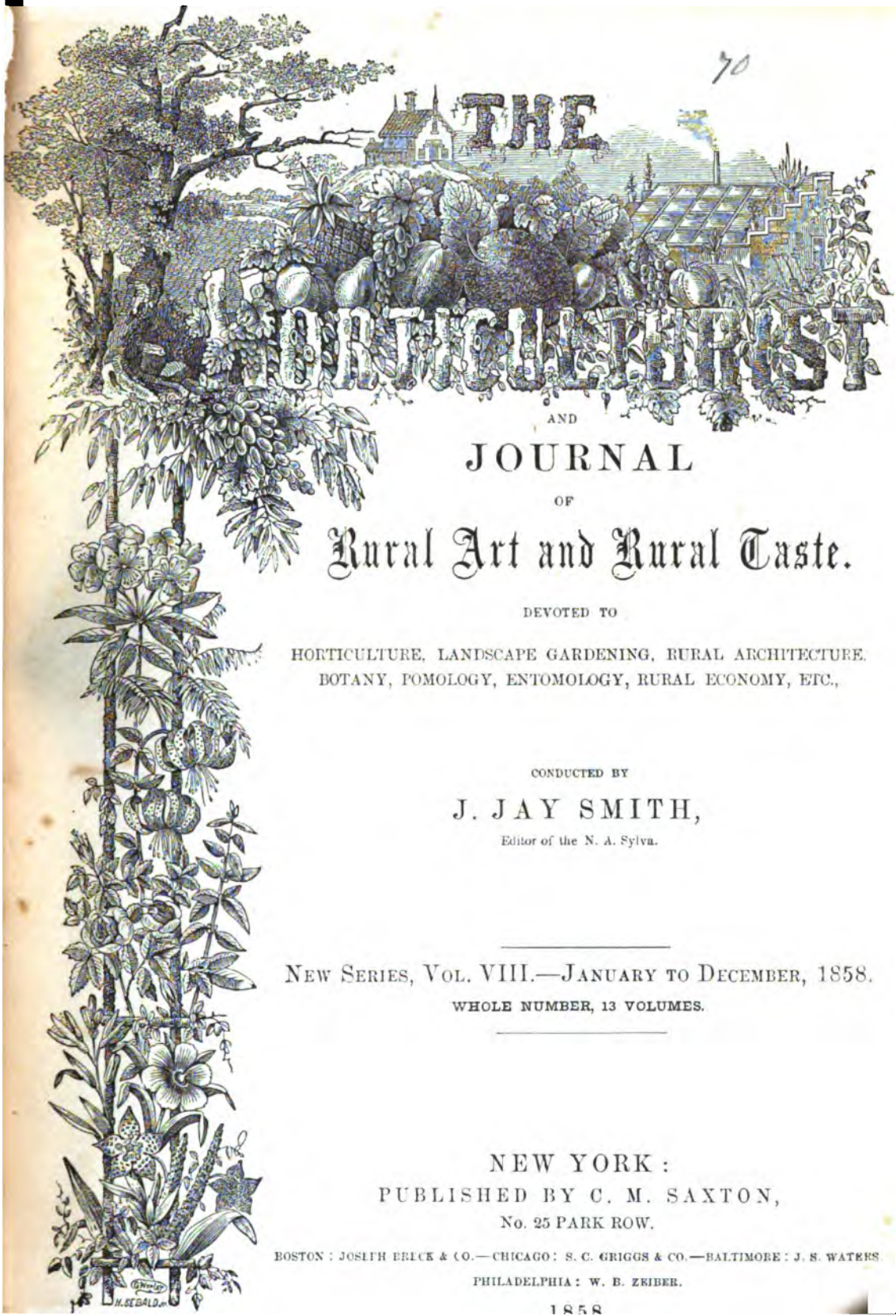
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JULIEN APPLE



THE HORTICULTURIST

AND
JOURNAL

OF
Rural Art and Rural Taste.

DEVOTED TO
HORTICULTURE, LANDSCAPE GARDENING, RURAL ARCHITECTURE,
BOTANY, POMOLOGY, ENTOMOLOGY, RURAL ECONOMY, ETC.,

CONDUCTED BY
J. JAY SMITH,
Editor of the N. A. Sylva.

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Life in the Country.



KNOW that cities have been tried and have been found a failure by many in pursuit of happiness—whether it be because business is unsuccessful, or that their minds find little satisfaction and repose in crowded thoroughfares—the country and its occupations will find new votaries. Some have formed ecstatic anticipations of the pleasure which rural life produces; they have been so wearied by the search for money, by erroneous estimates of the profits of trade, by mistaken confidence in human honesty, that they are ready to bury themselves in comparative solitude, hoping to surround their firesides with domestic pleasures, books, a few friends, and content.

Take heed, unwary citizen, how you precipitate matters. “Carking care” is not confined to towns; with the human mind, wherever it goes, the seeds of dissatisfaction accompany it; we cannot have everything to our minds in city rows; in villas it is the same; in cottages the difficulties are undiminished; the palace no less than the hovel contains the same ever floating fungus of disappointment. A city man suddenly transported to fields where nature holds sway, needs preparation for the change; some seeds will not germinate without soaking; the store-keeper who scarcely knows a pear from an apple-tree, needs information before he begins to plant. But most he needs to know how to pass his time without the customed ledger, or the society of mere acquaintances that have helped to chat life away.

We once knew intimately a fat merchant replete with cash, who won the hand of the most beautiful and accomplished lady of her day. To be near her friends he bought, built, and settled in the country. There chanced to be a neighborly farmer of elegant leisure, to whom trees were companions, walks with nature, society; the fresh air was poetry, books his delight, and his pen gave happy employment on a dull wintry day. Poet he was in the estimation of those of his contemporaries who chanced to know his merit, and though few, a fitting and appreciative audience listened to his humorous, his witty, or his religious musings. The village newspaper, then with only a very limited circulation, and that strictly local, caught up, whenever the author's modesty could be overcome, his fun, his satires on the things around him, or his happy musings when the world wagged to suit the rhymers. His life resembled that of Cowper's; he was a bachelor looking from the loop-holes of retreat on a world then just about to ruin itself with steam and railroads. These he eschewed, and, we believe, though a steamboat left and arrived at the village wharf more frequently than every day, he never put his life in danger by traversing her decks, and, if we rightly remember, gave her but one sorrowful glance. He was a resident of New Jersey—not distant from Philadelphia—a city in which he slept but one night, and was so disturbed by the noises that no inducements were strong enough to take him there again. In his fine inherited farm he took great delight; he was the reverse of morose; he was genial in all things, and in a select circle of near relatives was not only greatly admired, but beloved. He was no hermit either, but daily paid a visit to the village post-office for his most liberal supply of books, papers, and periodicals, and in a chat with favorite connections threw off sparks of information and humor which have left their impress on another generation. At home, too, the few who knew him well, found him genial and hospitable. We shall have something more to say of this almost unknown American poet and gentleman. To day we

devote a small space in order to insert two playful letters appropriate to the *Horticulturist*, which he addressed to our corpulent friend and his wife on their farming prospects, hoping to interest our readers in what we may hereafter copy:—

TO ———;

ABOUT TO REMOVE FROM THE CITY TO RESIDE ON A FARM IN NEW JERSEY.

The rural mansion's reared at last,
The toll of building almost past;
And now, while winter's stormy gale
Around you scatters snow and hail,
Some evening hours are spent, I guess,
In planning future happiness—
Deciding where these shrubs shall grow,
Those fruits expand, or flow'rets blow;
Where waving pines shall throw their shade,
And where the verdant lawn be made;
Which fields for grain, and which for clover,
And conning great and small things over.
I love these plans—they keep the mind,
And body too, alert and gay,
For every hour employment find,
And banish hyp and gloom away.

Thou'rt travelling now, my friend, the road
Which leads, I think, to joy's abode;
But though not wound'rous wild and rough,
'Tis strewn with trivial joys enough.
Though ill of various kinds compose
The farmer's long, long list of woes,
Thou soon wilt find the laboring race,
Should occupy no second place:
Their time and toll though dearly bought,
One half at least are good for naught.
(In this, our land of milk and honey,
Where earth is plentier far than money,
The careful and industrious poor
An independence soon secure.)
Item—'tis spring—the orchards bloom,
And every zephyr breathes perfume;
'Tis time the Indian corn was planted,
For this, some extra help is wanted;
Away to this, and t' other neighbor,
To find a man to do this labor:
And when the work of hiring's done,
He'll play three hours, and labor one.
Once, on a time, a farming brother,
Returning from some jaunt or other,
His train domestic thus addressed:
"To know how business had progressed:
"Well Richard—I've been some time out,
What work have you, pray, been about?"
"Helping Tom, sir."
"Tis well, Dick, thou hast acted right,
United hands make labor light.
Thomas, I see the corn wants hoeing,
Pray, what have Dick and you been doing?"
"Nothing, sir."

The grass is cut—is turned—is dry—
Dark clouds proclaim that rain is nigh;
But lo! the wheel has lost a spoke,

The gears are rotten, shavings broke;
Ere all these things can be amended,
The time is past, the shower's descended.

Thy neighbor's herd of hungry swine—
As lean as Pharaoh's famished kine—
Assail thy fence, let down a bar,
And with thy wheat wage cruel war;
With snout insatiate tear the ground,
And spread wide devastation round!

When the first sprouting grass is seen
To tinge the riv'let's side with green,
Thy men permit the cows to wander
From mead to mead, up here, down yonder;
Ruin the lots through which they stray,
And lose their appetites for hay,
Till each dry bone-betraying hide
Seems Poverty personified;
Their legs refuse to bear their weight,
And crows receive them soon or late.

Through some unlucky youngster's fault,
The pigs have broth too hot, and salt;
Hence measled shoulders, scalded throats,
And varied ills that pester *shouts*;
Dogs find thy sheep delicious picking,
A mink each night purloins a chicken,
Rats share the corn, and mice devour the bacon,
The turkeys, geese, and ducks, by two legg'd rogues
are taken.

And will thy stomach, friend, be quiet
On farmer's plain substantial diet;
Thy appetite look pleased and clever
At salt and dried, recurring ever?
(For ah! expect not here to meet
The varied fare of Market Street.)
And canst thou, too, thy hunger stay
With broken meat on washing-day?
If not—tell John to kill the calf,
And send some brother farmer half:
And when he slaughters veal or sheep,
In turn take what he cannot keep;
Get, for thy well-fed, famished veal,
On which a hawk might make a meal;
And for thy tender, juicy mutton,
Such as is fit no dish to put on.

Thus, anxious friend, for thy repose,
I've warned thee of some coming woes,
That during winter's blustering weather,
While fenced from tempest—calm—secure—
Thou might'st a stock of patience gather
For the next year's expenditure.

TO THE WIFE OF ———;

ON THE SAME OCCASION.

As some pert scribbler, doubtless vain of knowing
Somewhat of digging, ploughing, harrowing, hoeing,
Has deemed it proper in this way t' impart
His wond'rous knowledge in the farming art;
I, too, would humbly offer to thy view
Of good advice a homely scrap or two;
Let then the following precepts, short and plain,
Though clad in rustic garb, attention gain.

No useful plant admires encroaching weeds,
No healthy chick from egg unsound proceeds;
From milk or cream, with garlic tintured strong,
Sweet butter comes not without churning long;

If meddling witches should thy churn infest,
To drive them from it, what device is best,
Fain would I tell, but fear to tell amiss,
For e'en the knowing disagree in this—
To luckier hours the business some adjourn,
And some put—sly—a dollar in the churn.
When night extends her sable curtains round,
Constructing cheeses be thy maidens found,
At morn's first blushes let the work be stayed;
For cheese should always in the dark be made;
So flies no knowledge of th' affair will gain,
But the fair fabric firm for years remain.

On no pretence permit or corn or hay
To take the gardener from his charge away—
Foul weeds will mark his absence with delight,
Spread their long columns with restless might,
In countless throngs obnoxious fill the place,
And crush the eatable and floral race.

By long experience, rotten eggs are found
Near twice as long in hatching as the sound;
Hence those to whom the worth of time is known,
Let their hens hover o'er the good alone;
To know their state the wise have various ways—
Some, patient, held them to the solar blaze;
Some, east and west attentive list'ning shake 'em,
And some, more cautious, think it best to break 'em.
When infant ducklings first delighted stray
To the loved stream, and cleave the liquid way,
Observe their wanderings with a watchful eye,
For varied dangers there in ambush lie;
The tortoise finds them most delicious food,
And pikes, voracious, soon will thin the brood;
And oft, when homeward bends the waddling train,
To spread their plumage to the sun again,
Prone on their backs they fall, and there must lie,
To sleep forever, if no help is nigh.

But oh! permit no cruel hand to lave
The new-born turkey in the chilling wave,

Nor, heedless of his pity-pleading note,
Thrust nauseous pepper down his burning throat;
Forbear to tempt him corn or cheese to eat,
Let eggs and onions form his savory treat:
When winged with wind, impetuous showers descend,
The shivering urchin from the storm defend;
So shall he soon rove distant meadows over,
And guard from hostile insect tribes the clover.

When louring clouds obscure the solar ray,
And eastern breezes chill the drizzling day,
For washing house bid every hand prepare—
And let them not the wholesome deluge spare:
Of chairs and tables clear the wondering rooms,
And call the tribes of buckets and of brooms;
To some far corner, undisturbed and dry,
From mops and water bid thy husband fly:
Then o'er the floors let rushing waves extend,
Roll through the entry, and the stairs ascend.
So will in time the air within, no doubt,
Almost as pleasant prove, as that without.

But my best maxims trivial must appear
To one who has such able counsel near;
Th' accomplished housewife's various arts, full well
The much loved mistress of * * * * * can tell.

JULIEN APPLE.*

Julian. Juling.

A SOUTHERN apple, of uncertain origin. Fruit, medium, roundish, tapering somewhat to the eye, rather one-sided. Calyx, small, in a narrow basin. Stem, short, in a moderate cavity. Skin, thin, yellowish-white, striped and marked with carmine, of a beautifully waxen appearance, sprinkled sparingly with whitish dots. Flesh, white, tender, juicy, and fine flavored; indeed, the finest summer apple known North and South. Middle of July in Georgia.—*White's Gardening for the South.*

THE GRAPE.

BY SAMUEL MILLER, CALMDALE, LEBANON COUNTY, PA.



IF the experience of one who cannot attend most of the horticultural exhibitions is deemed worth a place in your journal, the following is at your service.

Circumstances preventing me from attending any of the horticultural and agricultural fairs, this fall, except our State one at Philadelphia (where, *by the way*, the show of grapes was rather a slim one), I took it upon myself to note closely my own grapes, and those that have been sent me from other places, by my friends.

Isabella.—Not a ripe berry on my grounds, although a number of bearing vines. [This fruit is uncertain in Pennsylvania, and, now that we have better, will gradually be superseded here.—Ed.]

Catawba.—A total failure, except where they are trained against the east and south side of my house (brick wall); about one-half rotted; the balance were as fine as could be, and would have eclipsed by far any on exhi-

* See Frontispiece.

bition at the State Fair at Philadelphia. [Still, it is inferior to the newer Rebecca, Delaware, and Diana.—Ed.]

Clinton.—But few plants under cultivation; was, as usual, fine; only fit to eat when very ripe.

Diana.—A dozen or two bunches on a young vine; beautiful, compact bunches, and of excellent quality; will become one of my standard varieties.

Canby's August.—A very good grape, quite early, and said to be an excellent bearer; had a few bunches sent me; they were not quite average specimens.

Wilmington.—A very handsome and good white grape. Bunch, handsomely shouldered. Berries, oval, medium size, and of a greenish-yellow color; but all such are termed white. Supposed to be a native; quite hardy and productive.

Clara.—A most beautiful and excellent grape. Bunch, quite large. Berries, medium size, sweet, and high flavored, with little or no pulp. A seedling of Mr. Raabe, of Philadelphia; will most likely compete with Rebecca, being white like the Rebecca, if its hardiness (which is not yet fully tested in the open country) is once established. It has stood exposed, without injury, the last two severe winters, in Philadelphia.

Raab, or Honey.—Bunch, a little below medium, not shouldered, very compact. Berry, below medium, deep red, and as sweet as honey; to my taste, as good as the best; scarcely any pulp at all; said to be hardy.

Brincklé.—Another of Mr. Raab's seedlings, somewhat like Frankindale, but decidedly better. This, I fear, will not stand exposed to our severe winters in the country, although hardy in the city.

Emily.—Described by some nurserymen as a white grape, which it is not, being red like Catawba; had no taste of it yet, but know it to be one of the most vigorous of growers. I have vines, struck in the house last February, from eyes that are now ten feet high.

Cassady.—Why has this beautiful and superior grape been allowed to lay so nearly unemployed? On a little bit of a plant, set out in the fall of 1855, I, this season, had at least two dozen bunches of very handsome Cassadys, which fruit was pronounced by some very good judges as the best on the table, where Catawba, Concord, Isabella, and a number of others were shown. Vine, hardy, and a strong grower. Bunch, medium. Berry, hardly medium, the whitest of all the natives, but little pulp, sweet, with an aroma not to be excelled by any foreign variety.

Concord.—Needs no comment. When well cultivated in our latitude, is a first-rate grape [we do not agree.—Ed.]; and for market for the masses, will hold the lead for the present. [Then the masses don't discriminate.—Ed.] When grown here, it is far superior to those grown in its original place, or anywhere in the North.

Elsinborough.—A first-rate little grape, and ought to be in every collection.

Ohio, or Segar-Box.—I have had a strong vine these four years, and never yet had a ripe berry; mildews badly.

Louisa.—A seedling of my own; resembles Isabella very much, but has fewer seeds than that or any other American grape with which I am acquainted. Free from rot or mildew, strong grower, and hardy. A prodigious bearer, with but poor culture, and will, in size of bunch and berry, quality of fruit, &c., compare very favorably with most American grapes.

Rebecca.—Enough, but not one word too much, has been said of that grape. I have two vines growing, but they have not fruited. Had a taste of a berry of it at the fair, through the kindness of Dr. Brincklé.

Mary Ann.—A seedling, raised by J. B. Garber, of Columbia. Bunch, medium

size. Berry, do., quite oval, black, with a peculiar brownish cast. Skin, not thick. Pulp, small, and a rich, exceedingly sweet flavor. Ripens among the very earliest of our good grapes; strong grower, hardy, and an excellent bearer.

Albino.—A white grape; originated with the same as the last named. I have not yet seen the fruit, but it is said to be good, and quite handsome, hardy, and vigorous.

Delaware, of Ohio.—The head and front of all American grapes, when quality is brought into question. For a grape as large in bunch and berry, and productive, hardy, and free from mildew and rot, as the Concord, and as good as Ohio Delaware, I would stop but very little to offer a premium of one hundred dollars to the originator, to be produced within the next five years. But what would be a hundred dollars to such a lucky individual? his fortune will be made.

Le Noir, Norton's Virginia Seedling, Herbemont's Madeira, are all well worth cultivating.

Sage, or Charter Oak, Northern Muscadine, Early Amber, Early August, &c., are only worth cultivating where the fox flavor is desirable!

Black Hamburg, *Sweetwater*, *Canadian Chief*, Concord, and Isabella, were sent me from Canada West; the three first named, and Isabella, would have weighed very near a pound to the bunch. The Concord is far inferior to those grown here, in point of flavor, although the berry is larger than mine. But such Hamburgs, Sweetwater, and Chief, make one almost wonder what glass-houses are for, for these were grown in the open air, and as free from rust as a new pin. The mode of keeping the mildew from them, shall be given to you in some future communication by me, unless the grower of these splendid grapes gives it to you himself (W. H. Reade, of Port Dalhousie, C. W.), who is one of those substantial horticulturists and who does a thing right when he undertakes it.

That the knowing ones may be helped to distinguish a Canadian Chief from a Sweetwater, the following will be a pretty correct guide: Canadian Chief is more compact and shouldered in the bunch, the berry more inclined to oval than round, and has an amber tint not common to Sweetwater; not quite as sweet as the latter, but more sprightly; has not often more than one seed, and that straight and blunt at the small end, while Sweetwater has usually two, and sometimes three seeds, which are a little curved and pointy at the small end.

No one need call the Chief a native, nor need he expect it to stand our winters unprotected; those who do, will be disappointed.

Marion.—Bunch, medium. Size of berry, do.; black, very round, harsh, and unpleasant, until cool weather, when it is rich and agreeable. Juice, exceedingly dark, and will make a splendid wine; will most likely prove valuable at the North.

Logan.—Quite early. Bunch and berry, good size, sweet, and excellent.

Herbemont.—Beautiful, compact bunch. Berry, below medium; little or no pulp; rich and sugary. A little tender, I fear, but well worth a fair trial; will make a rich wine.

Clapier.—Although a foreign variety, has fruited splendidly in the open air. Bunches, of good size, oval. Berry, white, and very good.

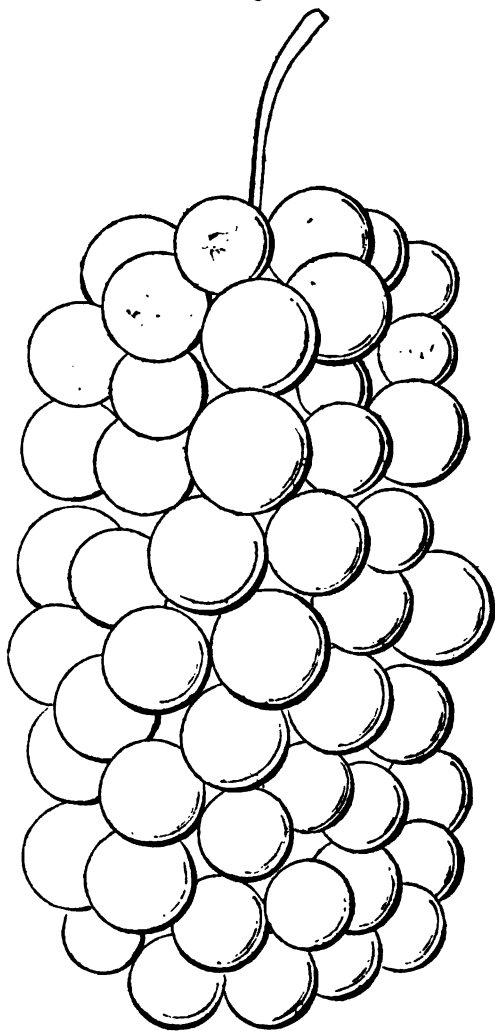
Swatara.—An early, sweet, little grape. Bunch and berry below medium size, but as compact as corn grains on a cob. Was discovered, many years ago, in a ravine through which the Swatara River flowed. The original vine is now forty feet under water, there being a reservoir built for the use of the Union Canal, now over where it grew.

Lehman.—A splendid, large bunch and berried grape; nearly white, but rather late, unless in a good exposure. Raised by Wm. Lehman, of New Lebanon, from seed of the Bland, crossed by Isabella.

I have now fifty varieties of native grapes under trial, and have the promise of some twenty more; all shall have a fair trial, if I live, and the results be given to the public. Fifteen foreign varieties just started, which shall have a trial in the open air, and if they don't do well, shall have a house built to run them into.

Out of the fifty varieties under way, I see an occasional sly fox beginning to show himself; but if one out of five of the new ones will prove worth cultivating, I will be satisfied.

Fig. 1.



Rebecca Grape.

[*Rebecca Grape*.—A valued correspondent reminds us that no figure of the Rebecca grape has been given in the pages of the *Horticulturist*. On examination we find this has been the case, owing to an accident to the best bunches we have received; and we now supply a cut, Fig. 1, copied by permission from Charles Downing's new book on fruits, which is a very fair representation, though the great compactness with which it grows can scarcely be said to be given.]

[*Canadian Chief*.—As regards the Canadian Chief grape, there seems to have been some hasty decisions; we will not say these were induced by prejudice or a feeling of distrust, but we feel very sure that no thorough trial has been made of it in this latitude. With a view of making the experiment, we procured, the past fall, eight vines from Mr. G. W. Fearman, of Hamilton, Canada West, and they are now planted, in this neighborhood, under favorable auspices. The box of the grapes sent us in the fall of 1856, proved to be scarcely ripe, but their appearance was certainly much in their favor, and we had a woodcut made of the largest bunch immediately. It proved *too large for our pages*, and was thus laid by, but by reducing one side of some half dozen berries, we are enabled to insert it on the opposite page, Fig. 2.

The fact that this fine bunch of grapes was produced in the open air in Canada is established, but it is said the grape vine is not hardy. Whether it is necessary to lay it down every winter and to cover it or not, such bunches of

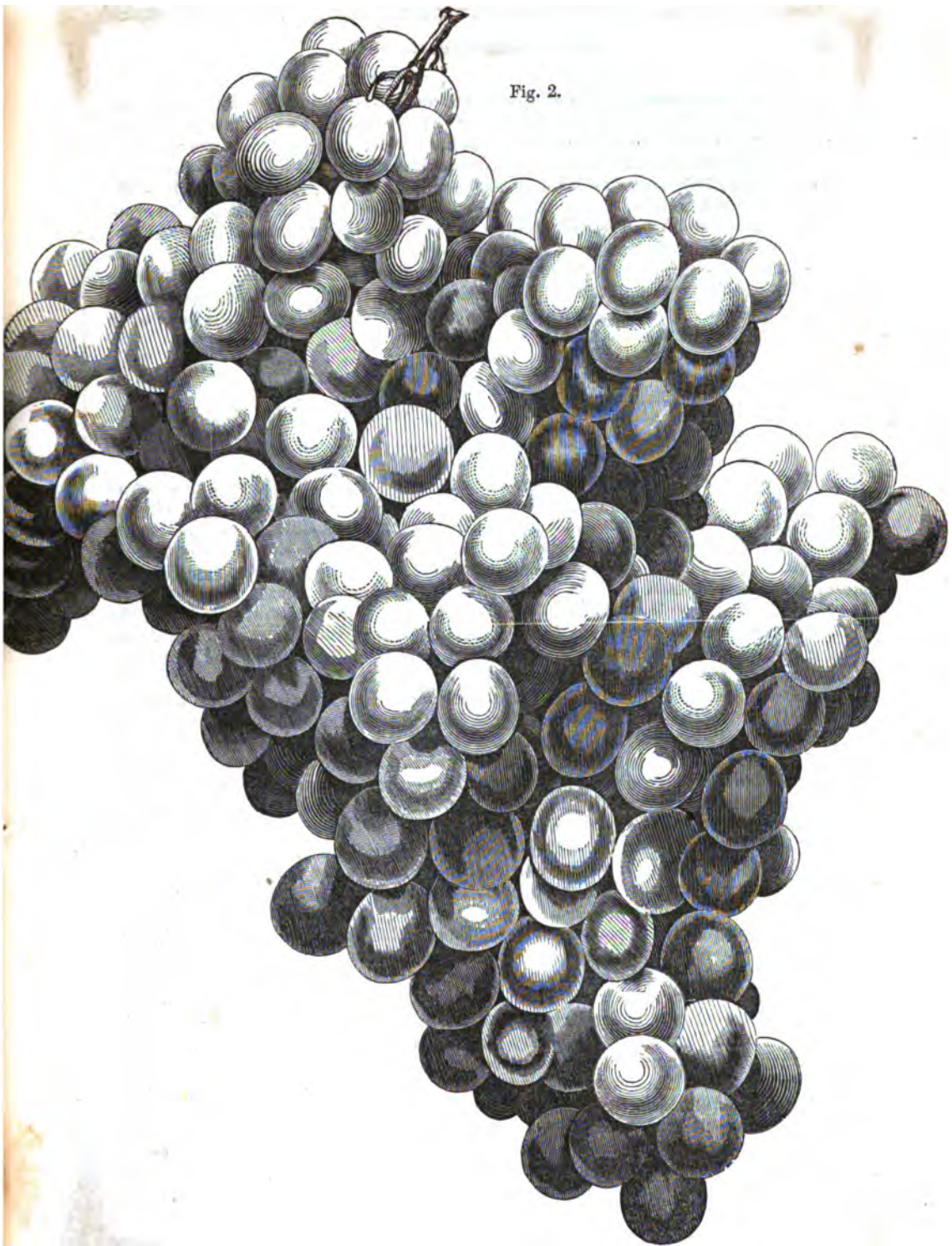


Fig. 2.

Canadian Chief Grape.

grapes are worth any trouble of that kind, and we see no reason why it may not be cultivated without such care further south; certainly it should have a fair trial before decisive opinions are hazarded. It has received the go by in some quarters, but notwithstanding has been in such demand as to make it difficult to procure a root. The whole vine was layered last year, and no grapes ripened on it. We have a fine photograph representing it in 1855, and showing a most prolific crop, with bunches about half as large as the heads of the first owner and of Mr. Fearman, who are pointing to them from each corner of the picture.

We wish justice to be done to all such introductions, and whether the vine be of foreign origin or not, if it ripens such fruit in Canada, and "probably" will ripen it better there than elsewhere, as Mr. C. Downing suggests, it is entitled to a fair experiment in more than one climate.—Ed.]

GARDEN VEGETABLES, NO. 13.—RHUBARB.

BY WM. CHORLTON.

RHUBARB, or, as it is often named, Pie Plant, is composed of a number of varieties that have emanated from two species of the genus *Rheum*, viz: *R. rha-ponticum* and *R. undulatum*, each of which in a natural state is very distinct in external appearance. The former has furnished most of the green and more cylindrical-stalked sorts, and all the tardy ones; while the latter gives us the semi-cylindrical, red, and earliest kinds. Cross breeding, however, has been now carried out so far, that the true specific difference is nearly obliterated, and the result is a great improvement in size, productiveness, and flavor. So much has rightly directed skill accomplished in this case, that a drastic acid leaf, not much larger than a yellow dock (to which these plants are nearly allied) has now attained to the dimensions of four feet in diameter under the best of culture, and a greatly superior sprightly acid taste in the three feet long and correspondingly thick leaf-stalk, the only part used for culinary purposes. Some authorities say that a third species, *R. hebridum*, has served a part of duty in this general amalgamation; but, as the name indicates, we doubt if this is, or ever was, anything more than a natural bastard; others, again, assert that *R. palmatum* furnishes the officinal rhubarb root, while the fact is, it has not yet been accurately determined which is the true and genuine article. Likely enough many sorts are manufactured into what should be from one source only, and that the greater part of the difference in medical action arises from this cause. These medicinal properties are purgative, tonic, and yet astringent, and there is little doubt but we get all the three in a modified form from the parts used in cookery, which makes it self-evident that we could not use a better alterative, in a reasonable quantity, as food at the time of change from the extreme winter's cold to summer's heat; the season when rhubarb is in greatest abundance.

The genus *Rheum*, collectively and aboriginally, inhabits the wastes of Siberia, the plains of Tartary, and the lofty mountains that cut off India from the cold table land to the north; and in cultivation it delights in a cool, moist, but well-drained situation. As an edible, it is invariably improved by high culture, and is best suited in an open, light, deep, rich soil, having a porous under base, through which the superfluous water may pass away. Nothing will be gained by stinting this plant; consequently, if we wish for profit, we must trench deep and manure heavily. For a general and permanent crop, proceed as follows: Early in the fall choose a situation and soil as near to the above described as the limit of the

place will admit of; the exact circumstances matter little, and mark off the size of the intended required space. This for a large family may be about thirty square yards, and will accommodate as many plants. Commence at one end, take out a trench two feet deep, by two feet wide, wheel the soil to the opposite end, have in readiness a good quantity of rotted barn-yard manure, cover the bottom three inches thick, and over this a portion of soil from the next excavation that is to be, mixing a portion of each as the work proceeds, so that when the next trench is opened a like two feet, the first shall have received six inches in depth of the manure. At the end of two or three weeks turn over the bulk, mix again, and level down. We are now ready for planting. Mark off distances of three feet square, and place one plant in each, so that the upper part may be elevated some three inches above the general level, spread out the rootlets carefully, and cover from the sides, leaving a small mound sloping upward towards, and two inches above the crown. Spread over the whole surface two inches of rotted manure, and all will be right for the winter. The best roots for planting are those which have been separated into single buds the season previously; but when such are not to be had, the large stools may be divided into such, retaining a quantity of healthy roots to each. A planting thus made will continue productive and furnish excellent quality for five or six years, if an annual mulching and forking be practised. It is also advisable to cut out the flower-stalks immediately as they are discernible, as if left to produce seed they exhaust the roots considerably.

When there is an ambition for developing this plant to its greatest capacity, it is requisite to make a plantation every year, that of the present doing duty for the next. For this purpose, in the early part of summer, prepare, as before stated, so as to be ready for planting the latter part of June. At this time examine your old roots; choose those which have good crowns; take up carefully; remove all but the youngest unexpanded leaves; divide each offset, and retain all the roots possible. Plant and mulch as before advised. If the weather is, and should continue to be dry, keep the ground moist by copious watering. By this process the active circulation is retarded during the summer months, and the after centralization, which produces the flower stems in embryo, prevented; and there is time enough through the autumn to furnish a solid leaf-forming bud with abundance of roots that will absorb any amount of liquid manure, if not applied too strong, when the leaves are somewhat expanded the next spring. At this time put on an extra mulching, and every week or ten days give a thorough soaking with the liquid drainings of the dunghill or hog-pen; this latter should be weakened by an equal quantity of water, and both should not be in too fresh a state. Guano diluted, one pound to twelve gallons, and freely used, will answer almost equally well. If there is *good drainage below*, the ground may be saturated with these substances; but care should be exercised in the application, as the central crown would be rotted by frequent contact.

It will be seen from a careful perusal of what is here written that there is a previous preparation of the plant before these powerful stimulants, so plentifully supplied, are recommended, and that its physical condition is ready to receive them. Under any other circumstances they would do more harm than good. Never apply such things to any plant unless it be healthy at the roots, and in active growth. By this process I have grown rhubarb stalks three feet long, and seven inches in circumference, the leaves being four feet in diameter; and others have done, and still may do better with the right sorts.

Forcing.—Rhubarb admits of being forced very readily, and thus will take the place of apples in pastry. The same practice and conveniences as are recorded in the November No. (1857) for asparagus, will apply to this in all the detail;

but further, if the plants be in the open garden, they may be forced where they are located by simply covering barrels over them, and heaping around and above with hot stable manure and tree leaves mixed, sufficient to maintain a temperature of about 60° inside the barrels. Be careful that the heat does not become too great, or the roots will be scalded. Some two weeks will be gained in the stalks being earlier ready for use by the covering with barrels alone, provided they are kept on all winter. It will be understood here that the development is carried on, in the dark, and the plants will require to be fully exposed to light and air when the growth becomes weakened. The blanching of rhubarb in this way renders the texture so brittle and tender, that peeling is unnecessary; the acid is more sprightly, and the astringent taste reduced, while in the red colored kinds the color is a beautiful pink, or carmine.

There are many varieties in cultivation, but the following will answer all purposes and are the best.

Myatt's Linnæus.—First quality in all respects, very early and productive, color pink, large size.

Myatt's Victoria.—Good quality, early, productive, very large size, color dark red. I have gathered six stalks of this kind at the same time from one crown which weighed over thirty-three pounds.

Myatt's Prince Albert.—Very early, and a good sort for forcing, color light pink.

Giant.—A very productive, green-colored, late and large sort. Bears pulling all summer better than any other. Buist's Large Early Red, and Mammoth, and Cahoon's Seedling are said to be extremely fine. These three I have not yet seen, and here a word of advice: always buy rhubarb roots from some respectable nurseryman who has a character at stake, or you may be sorely disappointed in your future expectations.

THE FLOWERING RASPBERRY AS A FRUIT.

BY THOS. MEEHAN.

MOST horticulturists are familiar with this plant (the *Rubus odoratus* of botanists), as it is very commonly seen in shrubbery borders, where it is introduced for the sake of its very showy flowers. I do not think, however, that any person ever saw it fruit under cultivation. I have had the plant under my observation cultivated both here and in other countries, and I never saw a berry unless in a wild state.

The improvements which have been noticed in the common blackberry, lead one naturally to look for like results in other native fruits. There seems to me no reason why entirely new races of fruits may not be obtained from our own stocks, the original of all our cultivated fruits being but improvements from the native stocks. Such races would, in all probability, prove far more easily cultivated, and return more certain results, than those now in existence. This has, to a great extent, been shown to be the case in the matter of the grape; and cultivators are now making skilful efforts in the attempt to improve it still further.

In a trip to the woods in Montgomery County, in this State, recently, it occurred to me whether the flowering raspberry could not be made to bear fruit under cultivation. There must certainly be some reason why they do not bear fruit in such a case, and probably no reason why that obstacle to its use as a fruit cannot be removed. If so, it would certainly be very valuable, for, in its wild state, it is far from being an inferior fruit; to my taste, at least, it is superior to the American Rasp-

berry, or Thimbleberry (*Rubus occidentalis*), and, on its native rocks, as I then saw them, it bore fruit in greater abundance than I ever saw the best cultivated raspberry do. I think that, by raising them from seed, a variety might be obtained that would bear berries when cultivated, and the foundation thus be laid for still greater improvement. I am the more inclined to the belief that such experiments would eventually be successful, because some of our new raspberries occasionally show a tendency to produce staminate flowers, and I have no doubt the raspberry will, after as many generations of seedlings have been produced as the strawberry has gone through, be as perfectly polygamous as that fruit is now known to be. Would it not be worth while for our horticultural societies to offer premiums for the best specimens of our blackberries, and American and flowering raspberries? If the fruit for competition were even obtained from the woods and wild places, it would have the effect of stimulating attention to the subject.

[The subject being one of interest, we called the attention of a botanical friend to it, and he has not only supplied additional information, but has forwarded us a wood-cut (made by himself, as an amateur), and we append both.—Ed.]

J. J. SMITH, Esq.—DEAR SIR: In reply to yours of the 11th inst., permit me to copy from the *Flora of North America* (by Torrey & Gray), as the description accords so well with my own observations, and it may be proper, however well known, that it should accompany the cut.

"Rubus odoratus (Linn.).—Hispid, with glandular hairs, especially the peduncle and calyx. Stem, shrubby, branched. Leaves, large, three-lobed (the lower ones five-lobed), the middle lobe prolonged, all acute or acuminate, mucronately serrulate-toothed. Stipules, nearly free, deciduous. Peduncles, many-flowered, compound. Flowers, very large. Sepals, appendiculate, with a very long cusp, shorter than the obovate-orbicular (purplish-rose color) petals. Fruit, very broad and flat."

"Rocky places, Canada, as far north as the Saskatchewan! and Northern States! to the mountains of Georgia! June to August. Stem, erect, three-fourths foot high. Leaves, pubescent beneath, cordate at the base. Peduncles and upper part of the stem, &c., densely clothed with purplish, very clammy, glandular hairs. Cusps of the calyx as long as the segments, sometimes dilated. Fruit, yellowish or red when mature, well-flavored, but many of the carpels usually abortive."

—*Rose-flowering Raspberry.*

Remarks.—1st. Linnæus has the credit of naming this plant, while, in the *Botanical Magazine*, t. 323, it is stated that "Cornutus" (Jacob Cornuti), "who first figured and described this plant, gave it the name of *odoratus*, on account of the very grateful fragrance of its foliage." If this is correct, then botanists ought to append "Cor." instead of "L.," who has honors enough, and needs not those of any other.

2d. It is not always erect. I have met with it much reclined. On the 20th of August last, while examining the flora of Duncan's Gap, Mifflin County, Pa., I met with it in abundance, being then both in flower and fruit. The shrubs were vigorous, the fruit large, and well flavored, to my taste. Pursh calls the flavor "very fine."



I can see no reason why the plant should not yield its fruit in our gardens, if planted in a damp soil of peat or bog earth, in a shady situation, especially when raised from the seed, and perhaps by crossing the flower with some of the hardy kinds of raspberries, a hybrid of considerable value might be obtained from its seeds. It is certainly worthy of a fair trial, on account of its large, rose-like flowers, as well as for the size of its fruit. I am aware that our Northern species, closely allied to this, have been unsuccessfully tried by English horticulturists, and, according to Loudon (who states that the *R. odoratus* was introduced into England in the year 1700), it would never yield its fruit.

The Arctic, or Dwarf Crimson (*Rubus Arcticus*), is exceedingly delicious, and grows in the wildest and most exposed districts of Lapland, Labrador, Rocky Mountains, &c., often the only food found in those dreary regions. Linnaeus thus speaks of it, with much feeling: "I should be ungrateful towards this beneficent plant, which often, when I was almost prostrate with hunger and fatigue, restored me with the vinous nectar of its berries, did I not bestow on it a full description." The Cloud-berry (*Rubus chamaemorus*), growing in sphagnum swamps throughout Arctic America from Greenland to Behring's Straits, Maine, White Mountains of New Hampshire, &c., has a large, delicious fruit, composed of few and large carpels, ripe in August. Some poet of the Shakspearian school, while speaking of those dreary lands, says truly:—

"Ever enduring snows, perpetual shades
Of darkness, would congeal the living blood,
Did not the Arctic tract spontaneous yield
A cheering purple berry, big with wine."

Herein we have another evidence of the beneficence and goodness of God, so manifest in all His works and ways, by kindly supplying the wants of His creatures in all lands, and in every clime.

Yours, truly,

J. STAUFFER.

MOUNT JOY, PA.

PEAR BLIGHT A FUNGUS.

BY R. R. SCOTT, ROCHESTER, N. Y.

DEAR SIR: Having learned, by unpleasant experience, that enthusiasm in the development of hidden truths, either in ethics or science, oftentimes entails ridicule upon the humble devotee, I have almost abandoned the hope of being able to divert attention from the *seen and obvious* to the *hidden truth of nature*. Myself an humble individual, without that pecuniary position which, in our day, secures for the shallowest observer a hearing and respect, it was my aim to keep my name from before your readers, lest it might do injury to the subject discussed. You have thought proper, however, to publish it over a scrap relating to the "Fungus," which causes the "leaf blight and cracking of the pear." This inquiry, we may safely conclude, belongs to the science of POMOLOGY, *so-called*; then why do not pomologists busy themselves to investigate and explain it? Strange, that theory after theory has been promulgated and withdrawn, not one of these, as yet, sufficient to account for the phenomena in all its bearings. Some months ago, in reply to an inquiry, I communicated the inclosed article to an agricultural monthly, but whether it was out of place, or too abstruse, it was lost sight of. A late article in the *Gardeners' Chronicle* restates the facts deduced from further investigations. In order to explain the matter, it may be advisable to give the article to your readers:—

RUST AND CRACKING OF THE PEAR.

No satisfactory cause has been assigned at any of the meetings where the subject has been discussed, for the rust and cracking which injures some varieties of the pear and apple, and particularly the *Virgalieu* or *White Doyenné*, among the former, and the *Early Strawberry* among the latter. Nor in the published proceedings of pomological societies, has any definite cause been stated to which this defect may be attributed.

M. J. Berkley, one of the ablest continental writers on these abstruse branches of natural

philosophy, presents the following particulars, which, we presume, refers to the malady in question:—

"Species of mould of the family of *Helminthosporium*, or *Cladosporium*, become dreadful pests on the leaves of pears and apples, especially of the former.

"The *Cladosporium dendriticum* (of Walroth) arises uniformly beneath the true cuticle, under which its mycelium (or spawn) radiates in every direction. It exhausts the strength of the leaves, and often kills the young twigs; while, on the fruit, it forms unsightly black patches, rendering it unsalable, and sometimes inducing, or else accompanied by, extensive cracking. When once it has attacked a tree, it is very apt to return in succeeding years.

"A new progeny raised from the seed of diseased individuals, will exhibit the parental malady."

The same writer recommends as the only probable remedy he knows, the collecting and burning of the infected leaves and shoots, and the application to the buds and remaining portions of a mixture of sulphur, lime and gum tragacanth, the latter to make the mixture permanently adhesive, the former to act on the deposited spores (seeds).

No other remedy is known when the malady has been established. We presume this is the rust and cracking so much complained of as infesting our *Virgalieu* Pear, by Eastern cultivators. Those who have abandoned the cultivation of the *Virgalieu* or *White Doyenné*, working their trees of that variety with others not so subject to the disease, only partially remedy the evil, as the sorts substituted will doubtless become infested if the foregoing statements are correct. The true policy would be to destroy the whole tree, or so to wash it as to destroy all trace of the cryptogamic pest. As the rust and cracking is more prevalent in some localities than others, some predisposing cause must encourage the propagation of this mould; this is either to be sought in the atmospheric peculiarities of the locality, or in the nature of the soil. It is said the more the soil of a district becomes cultivated or worn out, the more the *Virgalieu*, *St. Michael*, or *White Doyenné*, will rust and crack.

Unfortunately for our fruit growers and farmers, attention to practical science is not a characteristic of our country. We have only a few energetic botanists, whose labors are not appreciated as they should be. The New York State Agricultural Society has conferred a great benefit on the farming community by the circulation of Dr. Fitch's essay on insects; what association will call to the aid of the farmer and gardener some able cryptogamic botanist and physiologist?

8.

HARDY FERNS, NATIVE AND BRITISH.

BY J. E., GENEVA, NEW YORK.

DEAR SIR: Permit me to offer through the pages of the *Horticulturist*, a few remarks on this beautiful class of plants, which appears to be greatly neglected by the people of this country, especially amongst our ornamental gardeners. If we take into consideration the great variety and beauty, with their hardiness and easy cultivation, this is one of the most lovely tribes, and would be a great acquisition to the flower garden, and can be cultivated by the cottager or amateur, as well as by the wealthiest. I think the most ornamental way to grow the Fern is to make a nice rockery; this can be done by procuring a quantity of rough stones and irregular pieces of wood; the situation best adapted to the growth of Ferns is rather a moist, well shaded place. An open north aspect is the best. First take and train up a quantity of soil to form a gradual slope, and then place a quantity of old stumps or roots of trees or anything, with a good number of rough stones, so as to give the slope a romantic appearance; then take some good strong loam, one-half loam, mould one-fourth, and one-fourth peat soil, mixing them all well together, and then placing it six or eight inches thick amongst the wood and stones. This done according to any design, it will now be ready for the seed or plants, whichever is the easiest to procure. I think the seed might be sown at any season of the year, but seeds collected in the fall might be sown the last week in April, and you will have a quantity of interesting plants the same season. The following varieties are perfectly hardy and beautiful distinct species.

Aspidium or Shield Fern, *A. dentatum*, *A. bulbiferum*, *A. fragile*, *A. lan-
chitis*, *A. regium*, *A. cristatum*, *A. latatum*, *A. filix mas*, *A. fontanum*, *A. filix
foemina*, *A. spinulosum*, *A. rhæticum*, *A. oculateum*.

Asplenium, Spleenwort, *A. ruta muraria*, *A. trichomanes*, *A. viride*, *A. mari-
num*, *A. adiantum nigrum*, *A. ebeneum*, *A. alternifolium*, *A. lanceolatum*, *A. rhiza-
phyllum*, *A. septentrionale*.

Blechnum, Stone Fern, *B. boreale*, *anoclea sensibilis*, or sensitive Fern.

Polypodium, Polypody, *P. vulgare*, *P. combricum*, *P. dentatum*, *P. dryopteris*,
P. auriculatum, *P. virginicum*, *P. calearum*.

Botrychium, Moon Wort, *B. lunaria*, *B. fumeriodis*, *B. dissectum*.

Ophioglossum, Adder's Tongue, *O. vulgatum*.

Osmunda, Flowering Fern, *O. regalis*, *O. cirmamemea*, *O. claytoniana*.

Lycopodium, Club Moss, *L. selaginodis*, *L. alpinum*, *L. nudum*, *L. denticu-
latum*, *L. obscurum*, *L. complanatum*.

Scolopendrium, Hart's Tongue, *S. vulgare*, *S. officinarum*.

Adiantum, Maiden Hair Fern, *A. capis veneris*, *A. pedatum*.

Woodsia, *Hyperborea*, *W. ilnense*, *Woodwardia virginica*.

Pteris, Brake, *P. aquilina*, *P. caudata*, *P. atrapurplea*, *P. crispa*.

I have noted a few of the hardy varieties, which, with a little attention, would
have a pleasing effect. These varieties are quite hardy, being indigenous to the
Northern States and Britain.

These plants are beautiful under greenhouse treatment, many of the varieties
keeping their foliage all the winter. I hope ere long to see this lovely class of
plants largely cultivated, so that we may keep pace with our brethren across the
channel. I think there are a few of our gentlemen and ladies that will be able to
appreciate the beauties of nature peculiarly displayed in this curious yet magni-
ficent genera; there is room for considerable additions to the above selection,
but it will be found to be complete in distinctness. Will not some of our lovers
of nature's beauties take a step towards increasing this family? it is calculated to
lead us to a meditation towards Nature's God, from whom we have such choicest
gifts.

MOYER'S HONEY HEART CHERRY.

MR. JOSIAH G. YOUNGKEN, of Allentown, Pa., through whose hands we origi-
nally received specimens of the Jackson Apple of that region, sends us an account
of a cherry with the above name, which is highly prized in his vicinity. Mr. Y.
cultivates most of the popular varieties of cherry, but, of all, he considers this
the most profitable. He writes: "The original tree is yet standing, in Spring-
field Township, Bucks County, Pa. It is a healthy, vigorous grower, forming a
round head, has large flowers, and is very productive. The fruit is of the largest
size, of a regular heart shape, with the suture extending half round. Color, rich
red. Flesh, pale yellow, juicy, sweet, and of high flavor. The fruit is borne
on long stems, and is in season the middle of June."

We should be glad to receive specimens of this variety in due season. There
are now a great number of cherries that it will be difficult to exceed, ripening about
the middle and end of June; but there is much room for improvement in early
cherries, from the incoming of the Purple Griotte to the Napoleon Bigarreau. If
this variety will step in between, it may be very valuable.

A TRIP TO CUBA AND THE SOUTHERN STATES, No. 8.



LEAVING Havana near the close of March, our American party found good accommodations on the steamer *Empire City*; on board were about one hundred of Walker's men then returning as the forlorn hope from the disastrous campaign in Nicaragua. They were very badly off for everything, and no doubt suffered much for clothing during part of our passage to New Orleans.

Voyages by steam have now become so common that descriptions of them must be omitted by travellers who expect to be read. Suffice it, that the Delta of the Mississippi was safely reached in a heavy fog—that our pilot mistook his position and entered a pass quite too shallow for our lumbering ship—that we spent a whole day in the mud, with the paddles going, and passengers irritated, till relieved by a tug and the swell created by two ships in charge of a steamer passing under our lee, and within jumping distance.

This bar at the mouth of the mighty river occasioned much talk; and some green men declared that if it existed in places they knew of the merchants would clear it out every day rather than submit to such an annoyance! forgetting the difficulties occasioned by the immense mass of rolling waters which descend filled with the light debris of the country above.

The water at the bar at the mouth is fourteen feet in depth, which is double that of the Nile, Euphrates, Indus, &c., and fortunately does not grow shallower; five miles above the sea the river is found to be still one hundred and forty feet deep; here, as well as above, its current at the surface and on the bottom has nearly an equal velocity. At New Orleans Professor Drake, in 1844, found the depth to be *two hundred and forty feet*. This extraordinary depth affects the imagination with a strange feeling of awe as one looks at the surface, resembling externally that of other rivers we are accustomed to, which present to the eye a much greater volume; the impression is enforced by the remark that no one who has the misfortune to fall into its current ever comes up alive. The ages and ages that it has been running one road have elevated its banks without raising its bottom. The Thames, Loire, Po, Elbe, Vistula, Danube, Dnieper, Don, and Volga united, fall short of the Mississippi nearly one third in the volume of their waters; the vastness of the idea is increased when we remark that during a greater portion of the year this river affords a navigation equal to the circumference of the globe.

Of the successive layers of cypress swamp known to exist on the banks, it is sufficient to refer those in search of knowledge to Lyell and other recent writers who have unfolded the wonderful operations of this mighty stream for successive ages, developing from the water, grass preceding the cypress, and the cypress the live oak. The elevation of the grass zone is assumed to have occupied 1,500 years, corresponding nearly with the known elevation of the Nilotic valley, and some go so far as to assert that the whole geological formation has consumed a period exceeding 158,000! Sir C. Lyell estimates it at 60,000 years. How dwarf and pigmy is man; measuring the life of the present inhabitants by these opinions, their existence seems comparable only to the life of a fly that settles on a grain of sugar, and is brushed away forever by a breath of air.

As we ascend the river the mind must continually recur to the vastness with which the silent operations of nature are here conducted—so slowly that during the existence of three generations there is made scarcely as much impression as would be created by placing a grain of fine sand in a teacup or a pitcher of water, and yet so surely that its effect after thousands of years, are astonishing and tangible. Awe must take possession of the most frivolous minds as the successive phenomena of the great Delta are rapidly exposed to view.

Ascending as we did much of the distance in the night, less opportunity for observation than would have been agreeable was afforded; the smell of orange groves frequently filled the cabins; as day dawned we saw the plantations of this fruit in considerable numbers; one or two are very celebrated for the quantities they produce, and we could but remark that these were *sheltered* by plantations of forest trees around them to keep off the northern blast, and to protect them from high winds which would scatter the fruit; thus, we see the importance of this kind of protection even on the borders of the tropics, and in the region of the orange and the cane; how much more important in our colder clime, and especially on those prairies still open to the coldest blasts from the lakes.

New Orleans reached, we took an early stroll through its level streets, and were again interested to see the trees in full leaf and bloom before the advent of April. The sour-orange trees were loaded with golden fruit as in Cuba; the roses were magnificent, climbing to the tops of the houses; the Locust and the Pride of India, favorite street trees, the latter especially, were in full beauty. At the shops a few strawberries without much flavor had made their appearance, and we were delighted to see at this early date at the fruit stores a ripe yellow fruit of the medlar family, here called the Mespilus Plum, which blossoms in December, and is now sought for here with greater avidity than any fruit planted at the north. It is oblong, with small seeds said to contain much prussic acid, and possesses an agreeable acidity.

It is highly pleasant to find one's self on American soil again; coming from Havana, New Orleans has a homish look, which it would scarcely possess if approached from up the river. So lately from the tropics, the dress, hats, &c., were all different from what we had so recently left; and it was very striking to see people perambulating without cigars in every mouth.

A few remarks on New Orleans and the garden of Henry Lawrance, an enthusiastic horticulturist, will not detain us long, when we shall ask the reader to accompany us on a trip to Natchez, where there is much to interest the lover of gardens.

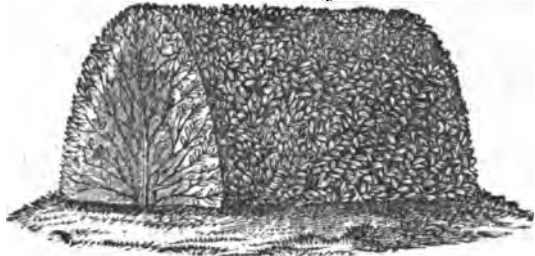
OSAGE ORANGE HEDGES.—A SUBSTITUTE.

Two years or more ago, we ventured to suggest that the Osage Orange hedge would rarely be successfully grown in America. The plant comes *nearer* to what we want than any other yet introduced, but it requires an amount of attention which it rarely receives, and hence, principally, its failure. Our remarks called forth a considerable amount of feeling at the time, and letters poured in upon us in such numbers, that we began to think we had trod upon somebody's corns. We had, however, seen many jobs of planting it, and especially along the Illinois railroads, where the plants were set down and left to their fate; they were overgrown with weeds, and had never been trimmed or attended to; many of the plants were deceased, while those retaining life were growing up into trees.

At Mobile, lately, we were astounded by seeing a great sign with "Osage

Orange Hedge Company" painted on it; but we saw no good hedges. Now, a good hedge of this plant should be something like this:—

How many of the vaunted hedges look thus? And, neglected, they are worse than useless, because they exhaust the neighboring ground. "Bad hedges are a nuisance to the eye, to the pocket, and to any farmer's crops. The sooner we make up our minds to be thorough enough to secure a good hedge," somebody has said, "whether of Osage Orange or not, the better."



Trimmed Osage Orange Hedge.

The editor of the *Northwestern Farmer* (Dubuque, Iowa) agrees with us, that, in the main, the Osage Orange will not answer; the region of the Northwest is too cold for it, and he proposes a new plant, which he calls the New Hampshire Thorn, but gives no other name to it. His engraving, however, represents very strong thorns that must be really formidable. "The wood," he says, "is extremely tough and hard, bending like a withe, even after being cut some months." He adds "that he has taken measures to procure and distribute seeds." One of the correspondents of that journal says:—

"The following inferences I drew from information and observation:—

- "1. That it is most decidedly the hardest thorn with which I am acquainted.
- "2. That it is the best guarded of any thorn I have seen, its prickles being from two inches in length downwards, and proportionally strong.
- "3. That it will bear cutting, and improve by it the thick shrubby nature of the plant.
- "4. That the size of its growth is just what is required for a hedge exposed to stock.
- "5. That if properly planted and managed while young, it will be impossible for either man or beast to break through it."

NEW PLANTS.

ARDISIA CRENULATA.—This is a very ornamental little plant, or greenhouse shrub, that may be readily managed as a window-plant. In February, its berries (a great ornament) are in perfection, the plant being at that time covered with a profusion of its coral-like fruit that hang in small clusters beneath and among the leaves, and which retain the brilliancy of their color for a great length of time. Even without the berries, it is a very beautiful plant for a room, having long, serrated leaves, of a fine, glossy green. *Ardisia crenulata* will grow very well either in a cold room or one where there is a fire, and should receive a supply of water frequently, until the commencement of April, after which it may have it every day. This, like all other plants with shining leaves, soon shows the dust; it is, therefore, a good plan to sponge the leaves once a week, by which means it will always be a gay and lively ornament for the sitting-room, and its health will, at the same time, be promoted. A mixture of loam and peat soil is found to grow it well.

DOBONICUM BOURGÆI (*Bourgeau's Leopard's Bane*).—Found by M. Bourgeau

during 1855, at Barranco de Angostura, in the Canary Islands. It closely resembles the *Cineraria*, and is "a highly ornamental greenhouse plant, flowering during the spring months." The ray florets are lilac, and the disk purple, studded with the golden-colored anthers.—*Botanical Magazine*, t. 4994.

*FORSYTHIA SUSPENS*A (*Pendulous Forsythia*).—It is the *Kengjo* of Kæmpfer, *Syringa suspensa* of Thunberg, and *Lilac perperse* of Lamarck. It was introduced from Japan in 1833 by Mr. Verkerk Pistorius, but has only recently been cultivated in England. Messrs. Veitch seem to be its first cultivators here, and sent flowering specimens to Kew in April of the present year. Its flowers are yellow, and "larger and handsomer than those of *F. viridissima*."—*Ibid.*, t. 4995.

CIRRHOPE TALUM CUMINGII (*Mr. Cuming's Cirrhopetalum*).—Messrs. Loddiges flowered this very lovely Orchid in 1841. It was imported from the Philippine Islands by Mr. Cuming. Flowers, crimson and purple. Blooms in spring.—*Ibid.*, t. 4996.

BERBERIS JAPONICA.—When Mr. Fortune was in China, in 1848, he discovered and sent to England three new Berberries, viz: Beall, intermedia, and japonica; and, unquestionably, there are no finer hardy evergreen shrubs in cultivation than these are. As I do not recollect having seen any published drawing of the berries of either of these plants, I beg to submit to your notice a sketch of those of *B. japonica*. When ripe, they are similar in color to those of *B. aquifolium*, but in size (and in this respect they are somewhat irregular), they more nearly resemble grapes. Their appearance is indeed very fine and rich. They are borne in terminal racemes, at first erect, but, subsequently, as the berries color, pendent. I have seen many plants on which the berries were very much more numerous than those sent.

The foliage, too, is very fine. Each leaf usually consists of four or five pair of leaflets and a terminal one. From twelve to eighteen inches is the usual length of an entire leaf. The three species named are perfectly hardy, and succeed well in a soil composed of good fibrous loam and decayed leaves or manure.—GEORGE LOVELL, Bagshot. *Gardeners' Chronicle*.

FRUIT AND MANURE.

BY L. B., NEW JERSEY.

In your November number my attention has been attracted by the "Old Digger's" letter. In my opinion it contains, in an elegant and compressed form, all that has been and could be said about the cultivation of fruit trees. It ought to be printed apart and put in the daily memorandum or garden book of every amateur or fruit grower.

To expect from a pear or apple-tree the most delicate, sugared, high-flavored products, and that in large quantities, without any cultivation of the soil, or with not half the care, labor, and expense given to a corn crop or a potato patch, seems to be folly, when we consider that in Nature's eternal laws nothing can grow where the natural food is wanting. The trees of our woods have their leaves, the decayed branches and shrubs, besides the natural benefits of rains and atmospheric influences; still, when oak woods have had their time, oak will grow no more in the same soil, at least *thrifily*, and without changing its constituents. It is a well-known fact that virgin soils produce spontaneously first the noblest among the forest trees, afterwards an inferior sort, till nothing but cedars or resinous plants will cover the once rich, now worn-out soil.

I am often asked why do the apple-trees bear no longer around here? or, when

they yield a scanty crop, why is the fruit so wormy, so poor that it is hardly fitted for the market? The reply is very easy. The soils have been worn out, not only by fifty or more crops of apples, but also by the grass, clover, and other unmanured crops, by all which, the phosphates, carbonates, and the once abounding potashes of the old forests, have been carried to market without any restitution to the generous soil. So much for the growth of the trees and their bearing. Now, when it happens that by a long interval of rest the trees have regained some strength by the *natural influences* of the air, rain and snow, nitrogen and ammonia, they soon blossom and yield another crop of fruit; but the soil has been so long in grass and so long neglected, that worms, bugs, and a legion of insects have found in that undisturbed soil a permanent home for themselves and their generations; and no sooner is a fruit set than they are at work by hundreds to sting and deform it.

A fruit orchard requires higher cultivation than any other crop, because it is cultivation in *two stories*, a crop below and one above. All that seems so very plain that I am often amazed when I see very able farmers, who would laugh at the idea of getting a wheat crop in a long neglected soil, without any manure or extra labor, look at their apple-trees as if they were exceptions to the general rule, and bound to bear no matter how poor the soil may be, because they did so fifty years ago!

A remark in Mr. William Bacon's letter (same number) hints at the possibility of overfeeding trees. There is truth in that. In the very rich and virgin soils of the West, where the trees are so luxuriant in their rapid growth, severe winters do great injury; we all know the results of our last winters in those rich prairies; but *here* there is little danger of overfeeding. Our soils are comparatively poor, and we are better protected by woods, hills, buildings, &c. Let us not forget that artificial products require artificial treatment. Our refined fruit trees can never be so hardy as the virginal wild trees of the species; neither can they succeed in soils where the wild tree can find supply and food for itself and its coarse, small product. The object of nature is to perpetuate the species by seed, ours to reduce the seed for the benefit of the pulp; what is only an accessory in nature's views becomes our main object. When the laws of vegetation are introverted in that way, our utmost skill and nurturing is required to keep up those artificial creations. They can bear manuring and feeding better than forest trees would do; and, if we do not *inflate* and swell their limbs with too much ammonia and water, if we use the constituents required for wood-formation chiefly, as potash, phosphates, lime, &c., there will be little danger of overfeeding trees, and I fear that for a long time to come, the reverse will mostly be the case.

STOCKWOOD GOLDEN HAMBRO' GRAPE.—This newly introduced grape is undoubtedly very fine; it is of the white class, and was obtained from seed of the old Black Hambro', impregnated with pollen of the White Sweetwater. In hardness of constitution, it equals the Hambro', and, for rapidity of growth, beats that well known variety. It is a most abundant bearer, and a free setter, ripening its fruit in the same house at the same time as the Hambro'; and it is a most excellent bearer in pots. In size of bunch and berry, it equals the Hambro', when that variety is grown to perfection. Skin, thin and tender, of a pale yellow, but when highly ripened, of a pale amber. Flesh, delicate and melting, very juicy, and remarkably rich, sugary, and vinous, leaving on the palate a full and luscious flavor.

SHRUBS WITH ORNAMENTAL BERRIES; SUPPLEMENTAL.

BY E. N. PLANK, WOLCOTT, NEW YORK.



LL of your readers, as well as myself, have perused with great pleasure T. Meehan's notes on "Shrubs with Ornamental Berries." The subject is one of interest to every lover of Nature, and has been handled with judgment and ability. However, to make the list more complete, and to bring into notice a few indigenous shrubs, which, perhaps, are not so generally cultivated as they deserve to be, the following notes as supplementary to those of Mr. Meehan may be acceptable:—

1. *Celastrus Scandens*. Staff-tree.—Waxwork.—There are few of our native shrubs more worthy of cultivation than the Staff-tree. It climbs by twining around the trunks of small trees, frequently attaining the height of twenty or more feet. It blossoms in June, bearing pendulous racemes of greenish-white flowers. The fruit consists of oval, berry-like pods of an orange color, which opening in autumn display the beautiful scarlet aril which envelops the seeds. The berries are persistent, retaining their form and beauty until late in the spring. The plant delights in an alluvial soil, and is of easy cultivation.

2. *Solanum dulcamara*. Bittersweet.—This is the true Bittersweet, though the name is sometimes applied to No. 1. This plant is also a climber, and is sometimes seen in cultivation as a covering for arbors, for which it is well adapted. The lower leaves are usually cordate, the upper ones hastate. The flowers, which are purple, are produced in cymose clusters. The berries are oval, and of a beautiful scarlet.

3. *Menispermum Canadense*. Moon Seed.—The foliage of this plant is its chief attraction. The leaves are large, smooth, and generally six-angled. The small, white flowers are produced in clusters. The fruit (drupes) are about the size and color of frost grapes. The stem is climbing.

4. *Cornus stolonifera*.—This shrub, which is a common inhabitant of our northern swamps, is worthy of cultivation not only for its white berries which are very ornamental, but also for the beauty of its shoots, which in winter especially are of a bright red color. I have known this plant to blossom twice in a season. *C. Canadensis* is a beautiful dwarf species, seldom attaining a height of more than six inches. It bears a terminal umbel of white flowers surrounded by a large petaloid involucre. The berries are red and very showy.

5. *Lonicera oblongifolia* and *L. caerulea*; both fine shrubs bearing ornamental berries, are sometimes met with in our low, rocky woods. The flowers of both species nearly resemble those of *L. ciliata*. The berries of both species are connate, formed by the union of the ovaries of the twin flowers. The berries of the first-mentioned species are purple, those of the last are blue.

6. *Benzoin odoriferum*. Spice bush.—While collecting plants during the summer of 1855, I noticed that the intense cold of the preceding winter had killed this fine shrub down to the snow line.

7. *Sambucus pubens*. Red-berried Elder.—This shrub grows plentifully with us here in Western New York. It certainly is a fine plant, and were it less common, would doubtless be cultivated. It blossoms very early in the spring, and ripens its berries in June. The contrast afforded by a bush loaded with ripe berries in the month of flowers is very fine.

Early in autumn I visited the original Sheldon Pear Tree, standing on the Major Sheldon Farm, now owned and occupied by Lorenzo Cady, Esq. The tree is twelve or fifteen inches in diameter at the base, and is probably twenty-five or thirty feet in height. It is of a fine, pyramidal form, and gives evidences of health and vigor, having made shoots the present season of ten or twelve feet in length. It bore this year an average crop of fruit which sold readily for twelve dollars per barrel. The farm on which the tree stands is in the town of Huron, Wayne County, N. Y. E. N. P.

P. S.—Above a year ago you promised us a new American edition of *Lindley's Theory and Practice of Horticulture*; may we look for its publication soon?

[We may as well say at once that Lindley's new edition is vastly superior to the first; it was prepared for publication; the new wood-cuts were made, when it was found that the *new* would interfere with the *old*. It is the etiquette of the *trade* not to publish on each other, and the proprietors of the *old* and superseded edition were not prepared to enter upon the expense of the much larger book; they had it under consideration, however, when the money panic set in, and we cannot now say when, if ever, the American public will obtain this invaluable work; the cost of the English edition is over six dollars.—ED.]

TRAINING TREES AND SHRUBS.

A GOOD deal has been written and spoken about "reformatory training" in our social system; we should be none the worse off by a little reformation in the training of some of our trees and shrubs, which would be the means of obtaining better specimens of plants and more abiding ornaments to the flower garden and shrubbery.

Lately, an arbor-vitæ was cut down which measured about eighteen inches in diameter about a foot from the ground; for many years it was a beautiful plant, both for breadth and height, but the bad training of its youth was the cause of its destruction in its declining years. Instead of training it with one stem, there were several stems allowed to grow together, which, in the course of years, hastened the destruction of the plant. There were two series of roots belonging to the tree—one in the soil, and the other in the body of the stem; when the several stems increased in size, the bark of the one came in contact with the bark of the other; when both were wounded, a lodgment was made for water, roots were produced at the injured parts that pushed their way into the wood, which hastened its decay, so that when snow or heavy winds came, the branches or stems were liable to be broken off, and the breaking continued from time to time until the ruins of the plant had to be removed altogether.

The training to single stems ought not to be confined to members of the Thuja family, but might be extended to species of other genera, such as Juniperus, Taxus, etc., so that when winter and rough weather assailed them, they would be able to resist the storm.

ABIES MENZIESII.

THIS species was named in honor of A. Menzies, Esq., who had previous to Douglas travelled over a great part of the northwest coast of America, and had



discovered this and many other interesting plants. Douglas found it in North California, and describes it as furnishing a useful kind of timber.

Manzies' Spruce appears to thrive best in situations where the soil is moist for the greater part of the year; in low bottoms, not absolutely flooded, with a moist atmosphere, it grows extremely fast. It is likewise found to thrive well in Scotland, and of course in our northern and central regions; on the most exposed moors, it never suffers, but, on the contrary, the peaty soil and humid atmosphere appear favorable to its growth. On dry soils it frequently loses a portion of its leaves during the dry weather, and this gives it a shabby appearance and has led some to condemn it. In such situations it should be liberally supplied with water during the growing season.

DISEASE IN PLANTS.

A VERY singular case, illustrative of the effects of the mycelium of Fungi arising from dead wood upon neighboring plants, occurred a few years ago in Northamptonshire, England. A Golden Rose, remarkable for the size of its flowers, and a great favorite from the peculiar circumstances under which it was planted, was the subject of conversation amongst a party of friends, who were admiring its beauty, and alluding to the matter of interest with which it was associated. Though apparently in the most vigorous health, the next day it was withered as if killed by a stroke of lightning. The mystery, however, was soon developed. On examination, the roots were found to be covered with a white web of mycelium, which was evidently of extraneous growth. Other instances have occurred of a similar character in the same garden, and we have in consequence been convinced that the principal reason why trees will seldom succeed where an old one has died, is due to fungi arising from the decayed roots. Evidence of a like kind will be found in London's *Arboretum*, under the article "Larch." The principle, however, is of far wider extent. A disease was noticed some years since in several parts of England, but especially at Ely, where it is known under the name of Copper Web, as attacking Asparagus. It is due to some mycelium, known to botanists under the name of *Rhizoctonium*, but of which the perfect form has not yet been ascertained. In France, it is the pest of lucerne, chiccory, saffron, and of several other objects of cultivation. We believe that it is always traceable either to dead vegetable bodies in the neighborhood of the roots, or to more recent substances like sawdust, mixed in the manure. It is well known, again, that tender annuals often damp off in a frame without any apparent cause. Where leaf-mould or matter from the base of fagot ricks imperfectly rotted, has been mixed with the soil, mycelium developed on the little fragments attacks the roots and kills them; and we have found the same effect arise from lumps of hard cowdung mixed with compost, which are very apt to produce mycelium.

The fungi of which this mycelium is the infant state, in many cases, could by no possibility be developed upon the plants which it destroys, but it should seem as if there was a peculiar tendency in many fungal threads to produce decomposition upon tender cellular tissue with which it may come in contact, and if one cell only be attacked, the taint may easily be communicated from cell to cell in any direction which may be least capable of resistance. If there is any truth in the notion (which, within certain limits, can scarcely be denied) that particular roots have an especial reference to particular branches, we have a ready solution of the mystery, that one branch should perish while the rest of the tree is healthy. In some cases, injury no doubt arises in a different way from contact with decaying

vegetable matter, where no mycelium may be produced, and the effect may be precisely the same. An interesting account of injury arising from such a cause is given in the *Bibliothèque des Chemins de Fer*, in Payen's treatise on the maladies of several objects of cultivation. It is a matter of experience that sugar beet is extremely subject to decay when sown on ground which had formerly borne a crop of the same vegetable. The plant is one which sends down a long tap-root into the ground, and when the crop is removed, a large portion of this generally remains behind, though at a considerable depth beneath the surface. When the tap-root of the new plant strikes down to this depth, as it will naturally do if vegetation is vigorous, the tender spongelets are affected by the old putrescent roots, and the decay is soon carried upwards, to the destruction of the crop.

The inferences from the subject are obvious, and show the necessity of increased care in many quarters of the garden, where matters have long been left to take their chance.—M. J. B., in *Gardeners' Chronicle*.

A TALK FROM IOWA.

BY JAMES MATHEWS, KNOXVILLE, IOWA.

I HAVE observed an obstruction in the circulation of the *Horticulturist* this way, since the reception of the April number. I presume, without looking over my receipts, that the cause is *non-payment*, which is a good one. I wish every editor in the land would pursue the same course. The *Horticulturist* is one of the periodicals that I want as long as I am able to take or read a paper, *provided* it continue as interesting and useful as it now is. I have been a subscriber from its commencement under the auspices of Mr. Downing, and have all the volumes bound.

The climate in this part of Iowa proves too severe for most kinds of fruits, except the hardiest varieties of apples. The two past winters killed all the peaches and most of the cherries to the ground; also, the pears. The exceptions with me, amongst the cherries, were Early May, May Duke, Belle Magnifique, and Reine Hortense; and out of some fifty to sixty varieties of pears, Buffum is the only kind entirely uninjured by the freezing. Both of the winters referred to, the thermometer fell frequently to 20°, and at three or four times from 24° to 28° below zero. Catawba and Isabella Grapes killed to the ground; Brincklé's Orange, Catawissa Raspberries, and Lawton Blackberry, quite hardy. Several others, including Gnevit's Giant, large French Monthly, &c., killed. All the varieties of currants and gooseberries of course perfectly hardy.

I have taken some pains (as apples must be the principal reliance for those who intend to make their homes in Iowa) to examine and ascertain which are the most hardy and reliable in this vicinity. I have had the aid of Mr. Drury Overton, who is my neighbor, and a nurseryman of seven or eight years' experience here. We have set down as perfectly hardy: Red June, Fall Wine, Jannetting, Smith's Cider, Yellow Bellflower, American Summer Pearmain, Early Sheep's Nose (a very fine apple every way), Newark Pippin, Shaker Yellow (a first-rate apple, ripe in August), Wine Sap, Red Sweet Pippin, Roman Stem, Holland Pippin, Jonathan, Summer Queen, Michael Henry Pippin (no better apple here), Red Sweet Romanite, Green Everlasting, American Pippin, Summer Rose, Red Astracéan, Belle du Havre.

Clinton Grape proves perfectly hardy with Mr. Overton, and is a prodigious bearer. I ought to say that the two past winters have been an exception. This I know to be so both from the testimony of the first settlers here, and my own

observation. I removed to Knoxville in the spring of 1855. There were then in my garden four peach-trees, which, from size and appearance, I should say were from five to six years old, and which bore a fine crop that year. The winter of 1855 and 1856, they were killed root and branch.

Amongst the evergreen sand shrubbery which I have planted out: Scotch Fir (*Sylvestria*), perfectly hardy; White Spruce (*Abies alba*), Balm of Gilead (*Balsamea*), Blue Spruce (*Cœrulea*), Norway (*Excelsa*), and European Silver (*Pectinata*), all hardy, and grow well in our soil; Pines, Austrian (*Austriaca*), Corsican, Russian (*Rigensis*), and Weymouth, all perfectly sound; *Arbor-vitæ* (American), hardy; Chinese, considerably injured; Ginko (*Salisburia*), hardy; African Tamarix, killed nearly to the ground. Several varieties of the Box, all injured badly. Yew, common and upright (*Hibernica*), much injured; *Mahonia aquifolia*, suffered considerably; *Weigelia rosea*, perfectly sound. Amongst some twenty-five varieties of Bourbon and Hybrid-Perpetual Roses, all were cut down nearly to the ground, but this injury only seems to increase their propensity for blooming, for I have never seen freer blooming or finer specimens. Amongst the finest, I may name—1, Mrs. Elliott; 2, Reveil; 3, Bon Paxton; 4, Josephine Robert; 5, George d'Amboise; 6, Sydonie; 7, Duchesse of Sutherland; 8, Felicite of Rigeaux; 9, L'Enfant du Mont Carmel; 10, Madame Trudeau; and 11, Madame Laffay. The latter has branches now six feet high, made this season. No. 9 is one of the finest roses I have ever seen. I procured it of Mr. Le Roy, of Angers.

Baltimore Belle and Queen of Prairies, killed down considerably, but still bloom finely; Yellow Harrison, of course perfectly hardy; *Syringa*, Philadelphus, and *Grandiflora*, rather tender; *Bignonia grandiflora* and *Radicans*, both killed top and root; *Wistaria* (Chinese) and *Periploca*, killed to the ground; Persian Lilac, hardy. A few kinds of *Spirea* are hardy. Japan Quince (*Pyrus Japonica*), perfectly hardy; Horse-Chestnut will not grow with me in our soil; Mountain Ash, European, American, and Oak-leaved, all perfectly hardy; Weeping and Ring-leaved Willows, killed down.

The foregoing list may be useful to persons emigrating to this State. While we have to deplore the want of encouragement to cultivate the fruits generally, we may well felicitate ourselves on having one of the best agricultural States in the Union. Our crops, this year, are unexcelled. Of all the grains and vegetables, we have a superabundance; and yet, if the unfavorable accounts we have are true in regard to Missouri and Kansas, we shall have a market and paying price for all.

Our farmers and gardeners need none of your bone-dust, guano, or compost heaps, to stimulate the growth of their productions. Nature has bountifully provided us with all the fertilizing ingredients we shall need for half a century, if our lands are properly farmed. With the culture which your Pennsylvania farmers give *their* lands, our prairies would yield an average of one hundred bushels of corn per acre, and other crops in a like proportion.

I shall have a word or two to say, about my curculio remedy, in regard to which there have been so many hints, suggestions, and inquiries. I have some reports and testimony in relation to experiments made, some with slight modifications, upon my invention, which will, perhaps, place the question in a new light. [Let us have it by all means.—ED.]

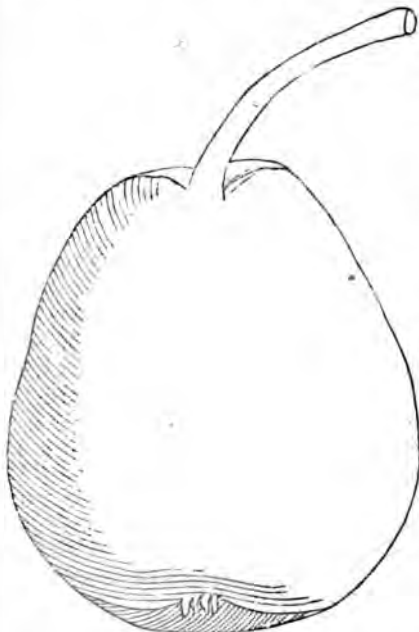


THE ALEXANDER PEAR.

BY JOHN B. EATON, BUFFALO, N. Y.

THE fine native pear to which I have given the above name, originated at the village of Alexander, in Genesee County, the seed having been planted thirty-five or forty years since, by a Mrs. Churchill, who had brought it from Connecticut. The original tree was about thirty feet in height, and about ten inches in diameter of trunk, and was standing when I first learned its history, but, as I have lately heard, is now dead. M. Calvin, Esq., of Cheektowaga, in this county (Erie), from whom I obtained the foregoing information, had worked trees from the original one some two years ago, one of which has been in fruit for eight or ten years. Specimens from Mr. Ely's tree were presented at the exhibition of the Fruit Growers' Society, held in this city September 13, 1855, and then first attracted my attention. Mr. Ely kindly furnished me with a number of specimens, from which I made a description and drawings. Last season, I was unable to obtain any of the fruit, but during the recent State Fair, Mr. Ely was present at an informal meeting of pomologists with a few specimens, which, although not so large as those which I had before received, were not wanting in their fine flavor. Several pomologists of eminence who were present, were unanimous in awarding it high praise, and several gentlemen were of opinion that it could be nothing less

than that fine pear, the Gray Doyenné, from which it is, however, without doubt, quite distinct. I am of opinion that it will prove inferior to few of our native varieties, and having compared it with a fine specimen of the Beurré Bosc, which happened to be in eating at the same time. I had no hesitation in deciding that the Alexander was the superior in flavor, although perhaps not quite so fine-grained, and in this opinion I was not alone.



Alexander Pear.

The following is a description : Fruit, medium size, sometimes rather small, irregularly obovate, frequently approaching oblong, and somewhat one-sided. Stalk, from one and one-fourth to one and one-half inch long, rather slender, curved, fleshy at the base, and inserted obliquely (usually at the side of a swollen lip) in a moderately deep cavity, which is often nearly obsolete. Calyx, small, partially closed. Segments, short, and irregular. Basin, narrow, regular, and pretty deep. Skin, rather thick, yellowish-green, nearly overspread with cinnamon-russet, except in the shade, and having occasionally a faint brownish-

blush in the sun. Flesh, white, a little coarse, and somewhat gritty at the core, melting, and very juicy. Flavor, sugary, rich, and very fine. Core, small. Seeds,

small, nearly black, and pointed. Ripe from September 20 to October 15. *Very good.* Shoots, rather stout, yellowish. Leaves, one and one-fourth to one and one-half inch long, narrow, sharply acuminate, deep green, glossy, and scarcely serrated. Petioles, long and slender.

HEAT AND LIGHT.—ACCLIMATION.

BY AN OLD CONTRIBUTOR.

FRUIT only obeys the general laws which regulate the formation of vegetable secretions. Heat and light are unquestionably the agents, though perhaps not the sole agents, upon which all the qualities of plants depend. No art can induce the rhubarb plant to form in Europe the medicinal substances which give value to the drug in those bright and heated regions of Asia which it inhabits, nor can the tomatoes ripened in England be for a moment compared, for excellence, to those produced in the north of Africa. Among the immediate causes of the changes that occur in the secretions of fruit, heat and light being of the first importance, the peculiar qualities of fruit are imperfectly formed without them, especially in species that are natives of countries enjoying a high summer temperature. It is found, that among the effects of high temperature and an exposure to bright light, is the production of sugar and of certain flavors, and that, under opposite circumstances, acidity prevails.

Very curious results are produced by this law on plants in the same latitudes, under different circumstances of light and heat. In some parts of England, for instance, trees and plants which are natives of tropical climates, often remain in the open ground through the winter without injury. Oranges, citrons, myrtles, camellias, magnolias, the Mexican agave, &c., require no protection from frost, and, in sunny exposures, are grown in the open air; yet the above fruits are difficult to ripen under the most favorable circumstances of position. The grape rarely ripens, while currants are acid, and only gooseberries and strawberries attain perfection; the apple, hardy as it appears in the American climate, rarely comes to perfection in positions of the average exposure, owing to the low temperature and humidity of the summer there, in contrast with the high temperature and freedom from sensible moisture here. The spread of wheat and the better cereals, is of recent date in the British islands, and is due only to the great care and superior cultivation applied. In 1747, a small field of wheat was a great curiosity at Edinburgh, and, up to 1770, very little grew there; now, it is abundant. It is, then, to superior light and heat combined that we are indebted for our great crops of cereals; it is to the same vivifying causes, in greater degrees, that the West Indies owe their pine-apples and highly flavored fruits which we in vain attempt to produce without artificial means.

It may be considered an axiom in horticulture, that *all plants* require the soil as well as the atmosphere in which they grow, to correspond in temperature with that of the countries of which they are natives. The mean temperature of the soil should be above that of the atmosphere; how much above, depends upon climate and season. The earth is warmer than the atmosphere, as a general rule. When plants are cultivated in glass houses, there is little difficulty in supplying them with the amount of bottom heat which they may require; but this can either not be effected at all, or only to a limited degree, by a selection of soils and situations, when plants are cultivated in the open air; and hence, one of the many difficulties of acclimatizing in a cold country the species of a warmer climate. It is true that plants will exist within wide limits of temperature, and, consequently,

a few degrees of difference in the natural bottom heat to which they are exposed, may not affect them so far as to destroy them; but it cannot be doubted that the conditions most favorable to their growth, are those which embrace a temperature rather above than below that to which they are accustomed in their native haunts. This point ascertained, we have come to an important discovery regarding acclimation.

CHEAP VINERIES.

To build a cheap vinery, use posts at back 5 feet apart, 5 inches by $2\frac{1}{2}$, 8 feet out, and 2 feet in the ground; posts in front 5 feet apart, of same dimensions as those at back, 3 feet out of the ground and 20 inches in; the ground must be well rammed around the posts. Rafters, 14 feet long, 3 inches by $2\frac{1}{2}$; mine were ready cut for glazing at Montgomery's saw-mills, Brentford. They have been in their present places eight years, and have neither warped nor sagged; they may be placed 15 inches apart. These 14-foot rafters give me ground width inside of about $12\frac{1}{2}$ feet; so that my house is 8 feet high at back, 3 feet at front, and 30 feet long. To give more head room, I have a sunken path in its centre 15 inches deep, and 2 feet wide. My walls are formed of $\frac{1}{4}$ -inch Deal boards, not feather-edged or rebated, nailed as closely together as possible (they shrink and let in air all the better); they are, as well as the rafters and other parts of the house, painted with anti-corrosive paint of a bright stone color, and the effect is neat and good. Three sliding shutters (each 3 feet long and 10 inches wide) are in the back wall, or, rather, boards, within about 18 inches of the top. One 10-inch board at front is on hinges, forming a shutter, so as to give a continuous opening there 10 inches wide. The roof itself is fixed—a matter of some importance in cost. My soil is dry and sandy, so I have not prepared any border, but merely forked in some rotten dung, mixing it with the soil to about 20 inches deep. I prune the vines on the spur method, do not grow large bunches, and always have a nice crop. I have fourteen Black Hamburgh vines in my house, for I reckon that a vine on the spur system, and the summer shoots well shortened in, ought not to occupy more than 2 feet in width; they give me, in round numbers, about one cwt. of grapes annually. The vines are planted inside the boarded wall in front, and as there is no brickwork, their roots have full liberty to go inside or out. Air is my great ally: I believe that our summer's sun gives heat enough to ripen all the fruits of temperate climates under glass, and that the vast increase of heat by day, when the sun shines, is quite enough without endeavoring to "shut it in" at night, as the old gardeners used to say, which only gives grapes with thick skins, and without color. I am now only alluding to the ripening of fruits at their natural season; forcing to have them early is quite another affair.

Grapes, particularly Black Hamburgs, are easily grown under glass. I have not yet said the cost of my vinery. I am almost fearful it will, by the builders, be thought too cheap. My 30-foot house did not cost seventy-five dollars, and I have a strong suspicion that a man fond of doing his own carpentry might do it for fifty or sixty. Glass is cheap, rafters are cheap, and $\frac{1}{4}$ -inch boards for the walls are also cheap enough.—VIGNERON, in *London Florist*.



The Young Gardener's Assistant. By THOMAS BRIDGEMAN, New York, 1857. A new edition, with an Appendix.

THIS is an original work, by the late Mr. Bridgeman, which has long kept its place as a standard book in the gardening world, and, with McMahon's (published in Philadelphia), continues to be the guide to the novice no less than the practised hand.

We like to record the success of practical men. In the case of the Messrs. Bridgemans, we find an industrious and thoughtful father successful through a lengthened career, and leaving his sons established in the *same business and in the same place*, after his death. Nos. 876 and 878 Broadway, New York, are now the property of the two sons, Andrew and Alfred. The seed department is managed by Alfred, and the greenhouses by Andrew Bridgeman, in two well-built stores, with their dwellings above. The business was first commenced in 1828, by the father, and continued by him until 1850 (the period of his decease), when the sons erected two four-story houses, well adapted to their objects; the southerly one is devoted to the sale of vegetable, herb, flower, and grass seeds, horticultural books, and garden tools and implements; the walls are plastered on all sides with cement, and the floor is of concrete, making it secure from dampness and the attacks of vermin. In the house devoted to the plant department, the basement is divided into a flower-room for keeping and making-up cut flowers, and a packing-room and general stowage; the store is appropriately fitted up with shelvings, counters, &c., and floored with encaustic tiles; in connection with it is a greenhouse, eighteen feet wide and one hundred and thirty feet long. A neat fountain with gold fishes in the front part, attracts much attention from the Broadway loungers.

This greenhouse is heated by two of Hitching's hot-water apparatus, advertised in this journal, and which Mr. B. assures us answer admirably.

The country establishment is at Astoria, where there is a fine propagating house,

five greenhouses, two rose-houses, one rose pit, and about forty sashes of frames for violets, pansies, &c. The grounds are ornamented with different varieties of fruit-trees, and are occupied principally in growing roses, ornamental and flowering shrubs, fruit, herbaceous and greenhouse plants, asparagus, rhubarb, strawberries, &c. &c. Mr. B. is prepared to execute orders to any amount for forest trees, dwarf pears, &c.

In the city store will be found one of the finest collections of bulbous roots; a number of each kind are potted for those who desire to have them already started—a convenience which many salesmen cannot afford. Here will also be found fancy flower-pots, bulb-glasses, and baskets for flowers, of which latter ornaments they fill innumerable orders during the winter season, as well as hand-bouquets and designs for parties and suppers. The greenhouse in the city is filled with plants suited for private houses during winter, and, in spring, they are replaced with bedding-out plants, for which the establishment is famous throughout the Eastern and Middle States.

This sketch of the business of two brothers in the heart of New York, realizes an agreeable picture, and is an example of exactly what we like to see. To minds imbued with a love of nature's gifts, and, of course, admirers of the floral world, it would seem to us to afford an amount of enjoyment which few other occupations can give. We record it for the encouragement of those who may now be struggling with economy and industry to found similar establishments elsewhere. There is not a city in our land where equally persevering attention and honesty may not bring like results.

A Series of Nine Botanical Diagrams. By the Rev. Professor HENSLow, of the University of Cambridge. Day & Son; issued for the Committee of Council on Education, Department of Science and Art. London.

These are colored figures printed on paper 40 inches by 30, from drawings on zinc by Mr. Fitch.

OBITUARY.—JAMES D. FULTON.

DIED, suddenly, on the 22d of October, Mr. James D. Fulton, of Marcus Hook (formerly of Philadelphia), in his forty-third year. Mr. Fulton was in New Jersey, with some of his men, collecting packing moss, when he complained of not feeling well, suddenly fell to the ground, and soon after expired. It was long known to himself and his friends that he labored under a disease of the heart, and his death, though sudden, was not altogether unexpected.

Mr. F. was one of the most active working members of the Pennsylvania Horticultural Society, and the fruit committee, especially, will sustain a severe loss. Of one whose course in life had been so unobtrusive as was that of Mr. Fulton, devoid of striking incident—indeed, of variety itself—but little may be said of interest to others than friends who appreciate his worth, and lament his early death, occurring, as it did, before his plans of usefulness had been fully consummated.

James D. Fulton was born at Bainbridge, County Down, Ireland, and accompanied his parents to this country when about six years of age. His father had been bred to horticultural pursuits, which circumstance gave direction to the son's bent and inclination. Some time after his arrival in this country, his father sought and obtained employment at the nursery grounds of the late D. and C. Landreth, and was for a short period foreman of the Fifth Street branch of their establishment; the son, then a school-boy, acquired the rudiments of an English education. It is not known that he exhibited an especial tact or inclination to study, but great aptness for the mechanical effort of writing, which was not impaired by

hardened sinews, the result of daily labor; few men with whom writing is an every-day occupation, could use the pen with greater celerity or grace.

The decease of his father, whilst he was still a mere youth, leaving his mother dependent on her own exertions, led to his being placed with the Messrs. Landreth, in the capacity of an apprentice, whilst the mother, to be near her son, resided in the family of one of those gentlemen; and it may here be observed, as an instance of long-continued connection (so unusual in this country), that though in advanced age, she still remains a useful attaché of the present firm of David Landreth & Son.

On reaching manhood, James ultimately became the foreman of Mr. Thomas Landreth, in which position he so conducted as to secure the good opinion of his employer and his customers. On Mr. T. Landreth relinquishing business, the nursery grounds passed into the hands of Mr. David Landreth, who, being otherwise engaged, interested Fulton in the concern, giving him the sole charge of the nursery, which he so managed as to secure the approbation of all persons having business relations with the establishment. On Mr. Landreth's declining that branch of his profession, Mr. Fulton decided to embark in business on his own account, with the intent to confine his attention more particularly to greenhouse plants, to the propagation and cultivation of which, especially camellias, he had a special inclination, and perhaps was not excelled in successful efforts in that department of horticulture.

Mr. Fulton had, but a few months previously to his decease, removed to a small property recently purchased by him, adjoining Marcus Hook, in Delaware County, Pa., where he was surrounding himself with the means of rational enjoyment, and was giving promise of increased usefulness. He had there laid the foundation of a systematic nursery, and had his life been prolonged, his grounds doubtless would have proven of much public utility. It has been ordered otherwise, and, in his case, the emphatic declaration, "in the midst of life we are in death," was verified. Whilst out from home, on business connected with his nursery, he was suddenly stricken by an affection of the heart, and died within an hour of the attack, in the forty-third year of his age, leaving a widow, childless.

Mr. Fulton brought to his profession the aid of reading, observation, and reflection, and though, like most self-made men, he may have been at times over-confident in his conclusions and deductions, he had the merit of receiving with respect the opinions of others; and there are none who associated intimately with him but will bear witness to his integrity of purpose in every relation of life. Like others, he was not without peculiarities of character, one of which was his refusal, from some *covenantal* sentiment, to claim the right of citizenship, and, of course, he never exercised the elective franchise pertaining to that condition—in this particular, presenting a striking contrast to his countrymen in general. It is, however, with him in his professional capacity, this sketch is concerned, and the writer can conscientiously pronounce him to have possessed the best characteristic of his profession—he was reliable in every particular—no man ever intrusted his interest in his keeping, and was unfairly dealt by. In no pursuit in life is opportunity greater or more frequent to lean to the side of our own interest than that of the nurseryman; and it may be safely affirmed, that in none where an equal measure of intelligence and industry is requisite, is compensation so illy bestowed.

He who would discharge his duty to the public in that capacity, should bring to his aid more than a mere average share of intelligence, close observation, and patient, unflagging industry. He may, as many do, get on with less, but nothing less will strictly qualify him for his post. Possessing these requisites, he may naturally expect the result to be independence, if not wealth; but, how few there are, if any, in this country who have attained it! We shall not speculate on the advantage of prolonged industry, nor moralize on the relative usefulness to the community and individuals of idleness and industry; our object is simply to call attention to a fact, with the view to impress upon the reader's mind, if he have occasion to purchase the products of the nursery, that prices apparently high, in many cases yield but inadequate return for necessary care and skill.

In concluding this brief notice of one who has so suddenly passed away, it is gratifying to bear testimony, and record the fact on pages devoted to the promotion of the pursuit to which he was so ardently attached, of his sterling worth; in every relation of life he was "an honest man."

His quiet manner, and unobtrusive mode of getting along, made the name of Fulton but little known abroad; he never advertised, and thus one of the best and most promising nurseries of the vicinity of Philadelphia, was rarely mentioned beyond a small circle. This course can rarely be as successful as one which promulgates a knowledge of what is going forward.

EDITORS TABLE.

THE OLD BOOK ON ORCHARDS AND GARDENING, of which we have already spoken, and given specimens, and which is the greatest curiosity in its way that we have seen, goes far to prove that all knowledge is not exactly modern. It enforces much that orchardists and gardeners of the present times insist on, and altogether makes a good foundation for a horticultural library. We are glad to learn it is exciting lively interest, and proves an incentive to our friends to make a little exertion to obtain readers for us, and thus procure the work for themselves.

The knowledge which the ancients had of farming and gardening, has lately been examined by Dr. Daubeney, who has just published his "Lectures on Roman Husbandry, delivered before the University of Oxford." He takes up the history of agriculture as the science was developed by Columella. The early husbandmen prized the rich loam soils, and learned to distinguish the earth that is soon crusted by the sun from that which is friable, black, and porous, and judged of the land by ascertaining whether it produced the lotus, the reed, or the basket-rush. They knew where to find springs, and how to estimate an argillaceous district. To this day, in the South of France, men are held in high estimation who possess the art of finding hidden waters, and that was an old Grecian invention. It is a curious circumstance, that one of the methods described by Hesiod is precisely the same as that now employed by certain African tribes; they ascend to a hill-top before sunrise, and when the warmth of the dawn begins to glow, they observe where exhalations rise. The Attic farmer, moreover, understood the processes of irrigation, the tokens of the weather, the agricultural signification of stars, clouds, swarms of insects, the colors painted on the sky by the setting sun, the ground fogs round Hymettus, the vapors on the Capharean peaks. He judged from circles round the moon, meteors, rainbows, bubbles on the surface of a river, the cry of a crane or chaffinch, the flight of island birds, the roll of dolphins, the creeping of the land toad into its pool, the burning of the candle-wick, and a hundred other natural omens. But it was in the processes of agriculture that the Greek ingenuity most conspicuously displayed itself. The farmer, if wealthy, kept smiths', carpenters', and potters' works upon his land, and constructed his own wagons with ilex axles, maple yokes for the oxen, poplar or mulberry feloes in the wheels. He applied manure to the fields, and justly appreciated the value of guano. Few improvements have been made on the manure pits of ancient Greece; the Grecians had a harvest home as in modern times.

The Greek authors supply abundance of details on the floriculture of their contemporaries, on the artificial blanching of roses, on the planting of garlic near their roots, with the fanciful intention of enhancing their fragrance; on the immersion of lily bulbs in cinnamon and purple wine, on the cultivation of stoneless peaches, piebald figs, and almonds bearing natural inscriptions.

In his view of Roman husbandry, Dr. Daubeney indicates many similar points. Like the Greeks, the Romans prized, above all other kinds, the manure yielded by birds, rejecting that of aquatic species, unless mixed with superior qualities. The sweepings of dove-cotes were highly valued. The use of chaplets necessitated the cultivation of flowers,

although "winter coronets" were made from shavings variously dyed, which afterwards gave place to gold and silver. Among fruits, he considers the melon was unknown before the times of Pliny, but it was before his time that it was recommended to perfume it, by keeping the seed in a bed of rose leaves!

The peach, he says, was brought from Persia, and Columella alludes to the fable of its poisonous qualities; probably the prussic acid in the kernels. These topics possess interest, and might occasionally be curious, if reproduced at our agricultural and horticultural societies, where men sometimes promulgate news that was familiar to the oldest writers whose productions are preserved.

NURSERY GROUNDS FOR SALE.—We refer to the advertising sheet for the particulars of a nursery spot near this city, which is worthy the consideration of some practical man, who would receive aid in his sales which would be very valuable, and would not require him to seek business entirely himself. The land, we know, has the best capabilities, and is partly stocked.

AMERICAN FRUITS IN ENGLAND.—British gardening has become celebrated for the great improvements it has effected in floriculture, and the whole process of rural adornments. Strangely enough, pomology has been, to a great extent, neglected. In the hands of a few enterprising men, strawberries and exotic grapes have improved a little, but the horticultural societies have done little towards encouraging a popular taste for fruits. Latterly, a pomological society has been formed; and, more recently, the London Horticultural Society has had exhibitions specially for fruits, the first of which, held October 24, seems to have been very successful. Foreign growers were invited to compete, and it was hoped that some contributions would be sent from this country. We did not expect that anything would be forwarded, as the chances would be very unequal of their success after so long a voyage, in a contest with fruit just fresh from the hands of the growers to the exhibition tables. We were therefore much gratified to see, in the report, amongst the exhibitors, Messrs. Hovey, of Boston, and that their courageous experiment of astonishing John Bull with American-grown fruits, was not altogether unsuccessful. Of the pears, the report says:—

"Messrs. Hovey, of Boston, showed a collection of American pears in this class; they had a warm, brown look with them, but, in point of growth, were greatly inferior to English fruit. We understand, however, that this has been a bad season with the Americans for pears, and those exhibited were likewise damaged very much from travelling, all of which, in some measure, served to detract from what merit they would otherwise have possessed. They consisted of *Beurré d'Anjou*, *Beurré Gris d'Hiver*, *Beurré Bosc*, *Beurré Superfin*, *Beurré Diel*, *Duchess d'Angouleme*, *Paradise d'Automne*, *Swan's Orange*, *Beurré Clairgeau*, *Passe Colmar*, *Van Mons Léon le Clere*, *Glou Moreau*, *Nouveau Poiteau*, *Marie Louise*, *Edwards' Elizabeth*, *Sheldon*, *Winter Nelis*, *Colmar d'Arenberg*, *Louise Bonne of Jersey*, and others."

It is to be regretted that, with three exceptions, the collection should have been made up of kinds of foreign origin. American pears seem nearly unknown in England. The *Seckel*, from the private garden of the Queen of England, took the first prize as a single dish. The *Lodge* is noticed as a fine, juicy, American variety, but entirely destitute of aroma. These are the only American names we notice in a long list of worthies, unless "*Chapman's Pear*" is intended for the Chapman of Philadelphia, which is, at best, but second rate.

The apples seemed to have better pleased our cousins. The report says: "Of these there was a large and extremely good exhibition, and the great size and large amount of color in many of them, rendered them objects of universal admiration." For the table, the *Baldwin* was considered superior; and the *Rhode Island Greening*, after (like a "*raw Vermonter*")

exciting their laughter by its "green" exterior, was pronounced "excellent for general purposes," nevertheless.

In speaking of the apples from the royal gardens, the report, after naming some, continues, "and the Jefferson, which is a new American variety, of excellent quality and great beauty." This will be information to many of our readers. We presume, the kind known in New York as the "Jefferson County," is the one alluded to. If any of our friends have had any experience with this kind, we should be glad to receive it.

FAIRMOUNT PARK.—Our fellow citizens are becoming impatient at the conduct of their representatives in Councils. A large sum of money has been paid by private persons, to present a large addition to the Fairmount Park, and we now see our "city fathers" allowing the place to be occupied by picnic parties, the trees neglected and injured—because, forsooth, they are afraid of the foreign voters! This will not do. The native vote demands attention to the wants and wishes of a great city, and a Park we must have. Let the present incumbents say or do what they will, public sentiment demands action in a matter to which Councils are committed by their own acts, no less than by legislative command in the law consolidating the great city of Philadelphia.

If Councils will authorize it, and prevent the overrunning of the Park by picnic parties, we would undertake to enlist a sufficient number of our friends—the gardeners—to supply a great amount of trees gratuitously, if necessary. Plant these, make a good sward, and a few roads and paths, and the thing is ready for a finish whenever educated men control our local legislation. Let us have no jobs.

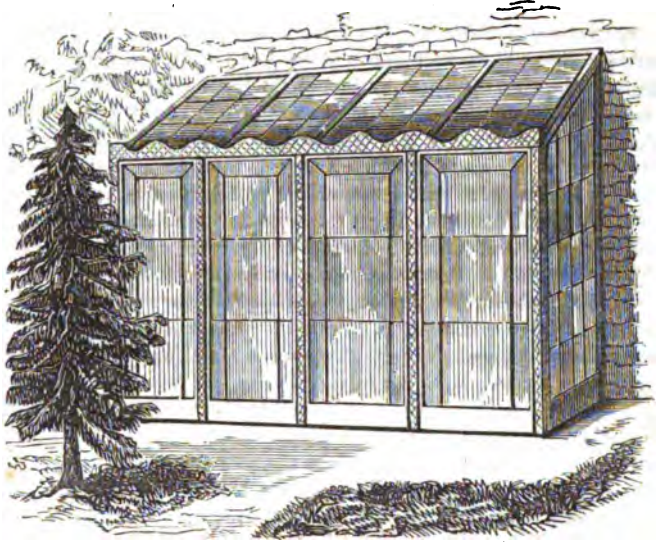
BOTANICAL EXPLORERS.—Fraser's name often occurs among the early botanical explorers of this country, and it is given to several plants, including a fine *Rhododendron*. The elder Fraser visited Newfoundland previous to the year 1784, and commenced his researches in the Southern States in 1785. Michaux, in his first expedition to the mountains, in 1787, speaks of having travelled with him for several days. Under the patronage of the Russian government, he returned to this country in 1799, accompanied by his eldest son, and revisited the mountains. It was Mr. Fraser's good fortune to discover and collect living specimens of the new and splendid *Rhododendron Catawbiense*, from which so many hybrid varieties have since been obtained by skillful cultivators. The father and son revisited the Southern States in 1807, and the latter, after the decease of the father, in 1811, returned to this country, and continued his indefatigable labors till 1817. Lyon and Pursh, both gardeners to Mr. Hamilton, of Philadelphia, next visited the wilds of the Southwest. Kin (a queer German) next investigated this great botanical region; and then came Nuttall. Dr. Gray subsequently made a tour to the mountains of Carolina, and published his account in *Silliman's Journal*, from which these facts and dates are taken.

All these explorers have given more or less attention to the scenery—Bartram, especially; and we are tempted to requote from Dr. Gray, who credits the following description of the *Roan Mountain* to Professor Mitchell:—

"With the exception of a body of granite rocks, looking like the ruins of an old castle, near its southwestern extremity, the top of the *Roan* may be described as a vast meadow, about nine miles in length, and with a maximum elevation of six thousand and thirty feet, without a tree to obstruct the prospect, where a person may gallop his horse for a mile or two, with Carolina at his feet, on one side, and Tennessee on the other, and a green ocean of mountains, raised into tremendous billows, immediately about him. It is the pasture ground for the young horses of the whole country about it during the summer. We found the strawberry here in the greatest abundance, and of the finest quality, in regard to both size and flavor, on the 30th of July." Prof. Mitchell is of Chapel Hill University, N. C.

GREENHOUSES are too often unsightly. Elegance should prevail in a structure, the very object of which is to express ornament and refinement. The expense of construction is no greater for a graceful proportion and good design than a frightful one, stuck all over with meretricious ornamentation. As a rule, elegance is favorable to cheapness, as those lines and angles which most please the eye, are usually those which consume the least amount of material.

The annexed design is for a moderate greenhouse on a south or east wall, within view of the house windows, or communicating with one. The top lights are placed at an angle of 45°. An ornamental moulding or cornice runs along the front, serving as a gutter to carry off the rain. The front sashes extend without interruption from the roof to the ground, one of them opening as the door. The cost of such a structure need not be greater than is usually paid for a homely building, which would be an eye-sore to every person of taste. The accompanying is at once elegant and simple;



it consists mostly of glass, the sashes for which being now made with machinery (though we confess not so well as by hand), form a small item of the cost. It affords greater accommodation within than can be had in a structure half timber, and affords ample light.

The eye should never be annoyed, most especially in all that pertains to flower culture.

PAMPAS GRASS.—The Southern States may possess this beautiful ornament; at the North, it is much to be feared it will not succeed. The *Gardeners' Chronicle* gives this description: "A few blades of worthless grass in four months had formed a tuft large enough to be trusted to the unprotected ground; in four months more it had formed a great hemisphere of gracefully curving leaves. When winter came it went to rest; with warm weather it roused itself, and immediately commenced a gradual overflow of beautiful foliage, till in six months more it stood revealed in all the grace and majesty of its nature. It might be described as a fountain of vegetation, acquiring more and more force from day to day, till at last the gushing fluid sprang up into jets of living silver."

MOSQUITO POWDER.—In the new book of travels by Mr. Fortune, whose services we are happy to know have been engaged by the Patent Office at Washington, there is a receipt for the composition of the mosquito powder mentioned by other visitors of China as eminently successful in dispersing these nuisances. What "nu-wang" is, we are not informed. "The persons employed, at the end of two months, ascertained that the ingredients were pine

and juniper sawings, wormwood leaves, and tobacco leaves reduced to powder, a small portion of nu-wang, and arsenic. The quantity of the latter is exceedingly small, and can hardly be injurious to health. The odor is not at all disagreeable, "not more so than the incense which is burned in every Chinaman's house who can afford the luxury. It is no luxury to the mosquito, however, for, in two or three minutes after it is ignited, not a buzz is heard, or mosquito seen. Mr. Fortune ascertained the proportion of the ingredients, and the different forms in which it is for sale. One of these is in little coils, one hundred of which may be bought for a sum equivalent to three pence of our money, and two of them will suffice for a night, in an ordinary-sized room."

FRAMES FOR HOTHOUSES.—At a late meeting of the London Horticultural Society, Mr. Howlett, a gardener of Norwich, sent a better model of his new plan of shading and protecting hothouses than that furnished by him at the great manufacturers' show at Chiswick, in June last. He covers the outside of the entire roof of the house with what may be called a Venetian blind, made of thin boards, opening and shutting by means of a quadrant which can be set to any angle at which it may be thought proper to fix the louvers. Of course in this, as in most other matters connected with gardening, expense is an important item, and on this point Mr. Howlett says: "I have had estimates made of the cost of fixing, and I find that 6d. per superficial foot would be about the cost. I am not," he adds, "so sanguine as to expect that, at that price, people would cover more than a small portion of their glass; but I think that for fern, orchid, and propagating houses, it would be found convenient and valuable." We think so, too. From the same was also a model of a shutter for protecting cold pits and frames in winter. This was a black, water-proof canvas, stretched over skeleton wooden frames, which are intended to be laid over mats, Frigi dome, or other protecting materials, to keep them dry, and therefore add to their durability and efficiency. These frames are stiffened by means of diagonal braces.

Cratægus.—At the same time, from the garden of the Society, came branches loaded with ripe fruit of the following *Cratæguses*, which are at present extremely ornamental, and in this respect, perhaps the best of their kinds, viz: *Aronia*, *Leeana*, *Orientalis*, *Macracantha*, *Coccinea*, and *Punctata brevispina*. Of these, *Leeana* had fruit nearly as large and showy as that of a Siberian Crab; that of *Aronia* was pale yellow, and tolerably good to eat; *Orientalis* and *Punctata* had dull red port-wine colored fruit; *Coccinea*, large and bright red, while that of *Macracantha* was brilliant red, with a beautifully smooth, polished surface. It will thus be seen that these *Cratæguses* are objects of great ornament in autumn when they are in fruit.

BULBS.—It has been a fine December for planting bulbous roots, and the probability is, there will be a good display of these flowers next spring. As an instance of interest in this line, we may mention that such was the enthusiasm of Mr. G. C. Thorburn (now of Newark, N. J.), in order to ascertain whether it was soil or climate that so much weakened the second and after years' growth of foreign bulbs, that he actually imported from Holland, one autumn, two large barrels of the finest soil from a hyacinth nursery, and made one bed entirely of it, removing all the original soil. The result was a most magnificent bloom—the admiration of thousands of his visitors. He carefully took up these bulbs in June, and dried them in the shade. They shrunk fifty per cent., and, on replacing them carefully, in the fall, he had the mortification to find them flower next year, weak and feeble stemmed, with not over half the bells which were on them the first year. So it must have been the climate; our warm and exciting rains of May and June, and the heat, are too much for them.

Mr. Thorburn was, we understand, the first to introduce crocus pots for winter flowering

of those lovely little pets. His instructions say: "Leave out the pots with crocus, etc., to make them hardy, as the longer they are out in the atmosphere the stronger they flower in doors, when it is too cold to leave them out day and night; in the mean time, take my advice, and use them roughly. Unless a very hard frost (25° or 20°), don't bring them in, let them have the rain (as much as falls), as it is a well known fact, that a bulb of hyacinth in a pot never begins to grow well until the pots are well filled with its silvery roots; then, it thinks of shooting upward, which the genial warmth of the house favors. Hyacinths or tulips never deteriorate from double to single, but, in our climate, degenerate into mere small flowers with numerous offshoots. It is a fact, that after the first year, both hyacinths and crocus dwindle to half their size, and never flower as strong as when first imported and flowered."

LADIES' DRESSES.—The *Westminster Review* has taken up the topic of crinoline, and thus alludes to inconveniences that, doubtless, some of our readers will recognize: "The most delicate flowers in the garden are cut off by the ladies' hems as they walk the path, and the little greenhouse is no place for such tragedy queens; they cannot move without knocking down half a dozen pots."

TREES NEAR SMOKY TOWNS.—We are sometimes asked to give a list of trees, shrubs, and flowers, that will grow in or near smoky towns and cities. The following contains such a catalogue, and may be usefully consulted even for places where smoke is not seen, but where the evident effects of a close population prevent many things from fully prospering:—

TREES THAT WILL LIVE IN OR NEAR SMOKY TOWNS.

Acer palmata (Hand-leaved Sycamore).—Handsome foliage and branches.

Carpinus (the Hornbeam).—This close-twigged, bushy-growing tree is sometimes seen in such a situation of considerable size.

Crataegus (the Thorn).—Several varieties of Thorns will live in the neighborhood of towns, provided the soil is dry and deep.

Cytisus (the Laburnum).—This half-shrubby tree can be recommended for the heart of towns.

Platanus occidentalis (the Western Plane-Tree).—This is the very best for planting near cities or towns.

Populus.—Some Poplars thrive in a middling way in towns. The best is the Balsam Poplar (*Populus balsamifera*).

Sambucus (the Elder).—This is scarcely a tree, but it has the quality of being very hardy in all places. Plant it where nothing else will grow.

Tilia (the Lime).—At a small distance from the town, the Lime may be planted. It loves a dry, deep soil.

SHRUBS.

Aucuba japonica (the Golden-spotted Japan Laurel).—This evergreen shrub seems almost created to bear the smoke with impunity. Where the common Laurel, Box, and others languish and die, this hardy Eastern plant flourishes well. Hardy though it is in Philadelphia, it will not bear the strong currents near high buildings nor exposure to the winter sun.

Berberis aquifolia.—A well-known evergreen dwarf shrub, with early yellow flowers, succeeded by purple berries. Very handsome shining foliage.

Buxus (Box-Tree).—Well-known as a perfectly hardy evergreen near Philadelphia and New York.

Ilex (the Holly).—This shrub thrives very fairly in such situations, provided a deep, good, dry loam is present.

Ruscus aculeatus.—Not very handsome, but bears smoke well.

In addition to the above, we would recommend the common Lilac, Syringa, and Snow-berry shrubs, that will live almost anywhere, provided care is taken to thin their branches out, and destroy the suckers annually.

FLOWERS.

The list of flowers that will live in or near large, smoky towns, is, of necessity, but scanty. In general, early flowers do the best, because their foliage has so short an existence that they do not suffer so much as others whose foliage is more persistent. To keep them as healthy as possible under such an unfavorable position, let the syringe and the rose water-pot be in constant use during the growing months.

Anemone japonica.

" *vernalis*.

Anthericum liliastrum.

Arum italicum.

Aster, several varieties.

Astrantia major.

Betonica grandiflora.

Caltha palustris flore-pleno.

Campanula glomerata.

Centaurea montana.

" *macrophylla*.

" *macrocephala*.

Clematis erecta.

Dielytra formosa.

Doronicum Causasicum.

Erigeron Villarsii.

Ficaria ranunculoides flore-pleno.

Helianthus multiflorus.

Hemerocallis flava.

" *fulva*.

Hieracium aurantiacum.

Hypericum elegans.

Iris, many varieties.

Ononis rotundifolius.

Orobis vernus.

Pulmonaria officinalis.

Saxifraga. Many species of *Saxifraga* bear smoke well. We remember seeing several large patches in the very centre of one of the smokiest of towns.

Solidago minuta.

Trollius Asiaticus.

Veratrum nigrum, fine foliage.

Vinca major and *minor*.

ANSWERS TO CORRESPONDENTS.—**THE CYCLAMENS, &c.**—(W. W.) These are very suitable window plants. As soon as the bloom is over, and they show a yellow tinge, refrain from watering, first gradually, and then altogether. When quite withered, remove all decayed foliage, and place the pots in a sheltered situation out of doors, turning them on their sides to exclude rain. In winter, take them in-doors, and as soon as they begin to push, examine the drainage, top dress or repot, and give a little water, increasing it by degrees; smallish pots will answer. Your *Dielytra spectabilis* should not be over forced; a coolish atmosphere suits it. *Daphne indica* and *odora* should be brought into the room from a place where there has been less heat than is usual in parlors, as soon as the flower buds show themselves.

POT POURRI.—This, we presume, is what you mean by "a perfume made of sweet-scented leaves, &c., for fancy jars." Mix half a pound of common salt with a quarter of a pound of saltpetre, a quarter of an ounce of storax, half a dozen cloves, a handful of dried bay leaves, and another handful of dried lavender flowers. This basis of the Pot Pourri will last for years, and you may add to it annually petals of roses and of other fragrant flowers gathered on dry days, as fancy may dictate. By the same rule, you may add, if approved of, powdered benzoin, chips of sandal wood, cinnamon, orris root, and musk. A very excellent Pot Pourri is made, in winter, with a pound of dried rose petals, mixed with four ounces of salt, and two of saltpetre, on which were put eight drops of essence of ambergris, six drops of essence of lemon, four drops of oil of cloves, four drops of oil of lavender, and two drops of essence of bergamot.

(E. S. W.) There is no difficulty in raising verbenas from seed, provided you can obtain

it good. As you have a frame, you should make up a gentle hotbed about the end of February, and as soon as the heat is sweet and moderate, you may sow the seeds of your verbenas either in pots or shallow seed-pans. When the seedlings come up, you should prick them out in pans or shallow boxes, and gradually inure them to bear the open air. Towards the middle of May, you may plant them out in your large beds. Of course you are aware that your beds will have all the colors of the rainbow (excepting, probably, yellow), and will therefore be all alike in that respect. One thing is possible: you may obtain some new and improved varieties; otherwise, we think your beds will not be very interesting.

GREENHOUSE CLIMBERS, ETC.—The following are evergreen climbers for a cool conservatory, and grow very fast and intermediate between shrubby and herbaceous, lasting many years, and getting over the roof very quickly: *Cobaea scandens*; *Maurandya Barlayana*, *semperflorens*, and *antirrhinifolia*; *Rodochiton volubile*, and *Lophospermum erubescens*. The following are hardier still, and more shrubby, but slower in growing: *Clematis odorata*, *cœrulea*, and *Sieboldii*. The following will grow rapidly, and be somewhat shrubby: *Dolichos lignosus*, *Passiflora cœrulea* and *Cœrulea racemosa*, *Lonicera japonica*, *Jasminum revolutum* and *gracile*, and *Sollya heterophylla*.

Hardy plants that will flower early in the conservatory, are Wallflowers, *Dentals*, *Weigelas*, &c.

EUGENIA UGNI.—A cool house will suit it in winter, where many degrees of frost would not enter, and any house not kept hot will do for it in summer. The *Guava* is easily managed. If frost is excluded, both plants will do well in a peach house or a viney where there has not been much artificial heat.

DIELYTRA SPECTABILIS. (A CONSTANT READER.)—It can be lifted out of the borders into pots of suitable size at any time after the stems of the plants have died down naturally, or in the spring, just as the crowns are beginning to appear again, which is also a good time to divide the roots. Plants thus lifted, with a little care, into large pots, flower admirably in a cool and airy conservatory. Those lifted in the autumn for frame or other protection, can be excited into flower much earlier.

(A SUBSCRIBER, Baltimore County, Md.) Your pear-trees are in good positions. Give them a mulching of manure, and some superphosphate of lime beneath it. Dig this in next spring, adding a couple of handfuls of guano at that time. Let the mulching be as extensive as the limbs, so that the roots will all get the benefit.

THE gentleman who dates from — — is respectfully informed that — — do not constitute the *whole* of horticulture, nor are — — everything. It is Hazlitt, if we remember, who speaks of persons with one idea, thus: "There are people who have but one idea; at least, if they have more, they keep it a secret, for they never talk but of one subject." Abernethy thought his pill a cure for all disorders.

ISAAC DILLON, Zanesville, Ohio, calls our attention to an error of the printer, in the December number, where the *Stockade Pear* is called *Stockdale*.

(S. S.) THE FABLE OF THE TREES, to which you allude, is in the ninth chapter of Judges, verses 8-15. Of this Addison said, "Jothan's fable of the trees is the oldest that is extant, and as beautiful as any that have been made since that time."

GRAPES.—We have frequent applications to know where the Delaware and Rebecca grapes are to be had. We refer to the advertising pages of this and former months for the information.

CATALOGUES, ETC., RECEIVED.—Annual Report of the Managers of the Chester County Agricultural Society, West Chester, Pa., with the oration amply interspersed with poetical quotations.

A Descriptive Catalogue of Fruit and Ornamental Trees, Deciduous and Evergreen Trees and Shrubs, Roses, Dahlias, and Flowering Plants, Camellia Japonicas, Azaleas, and other Greenhouse Plants, cultivated and for sale at the Forest Nursery, near Elkhon, Todd County, Ky. By J. S. Downer & Son, 1857. Kentucky possesses a soil and climate well adapted to make it a garden, and we are glad to know that it has, in Mr. Downer and his son, most useful, practical, and honest nurserymen, who are distributing with success every variety of trees and ornamental shrubbery which can be procured in America and abroad. Our letters frequently mention the Messrs. Downer with the highest approval. One of our promised pleasures is a revisit to the gardens and farms of Kentucky. Some of Mr. Downer's friends have greatly misunderstood a notice of his former catalogue, which has been explained to him to his entire satisfaction.

Catalogue of Fruit and Ornamental Trees, Evergreens, Flowering Shrubs and Plants, Roses, &c., at the Morris Nurseries. Cultivated and for sale by J. S. Darlington & Co., Westchester, Pa., one of the establishments in which Pennsylvania justly takes a pride.

Mr. Baumann, of Bollwiller, in the Upper Rhine, has issued a Catalogue in English, of the plants he has for sale. It is rich in fruit trees cultivated on the continent of North Europe, in a bad climate, and it has the reputation of the sorts being correctly named.

CATAWISSA RASPBERRY.—A circular from Joshua Peirce, of Washington, D. C., setting forth the value of this newly-introduced perpetual fruit, gives opinions in its favor from the best sources. The Catawissa we consider a most valuable introduction. It ripens its berries till hard frost. No doubt it is to be the parent of still better fruit.

J. JAY SMITH.—DEAR SIR: Isn't the Rebecca Grape a "great institution" for a small one? (I use the above expression to avoid a repetition of the descriptive term, "decided acquisition," which I think I have seen used semi-occasionally!) and the Delaware, too? The Rebecca, I think, will nearly answer the requirements which you once suggested to me as very desirable for a new hardy grape. I have one fine young vine of it, obtained, about a year since, from Mr. Brocksbank, which has made a growth so good, the past season, that I shall expect fruit from it soon—possibly a specimen next year. Two bunches of the ripe grapes from Mr. B., were sent to me in the fall of 1856, and were unanimously commended by the leading members of our Horticultural Society. I have the promise of a "copy" of the Delaware, next spring, from a friend, for the reception of which (the vine, not the friend!) I have already provided a border, suitably large, deep, and well composted. By the way, have you, personally, the Hartford Prolific? If not, I should be pleased to present you with one in the spring. [We have not, and being just now greatly interested in the grape, shall be glad of a "copy."—Ed.]

This grape, allow me to say, is destined to take a high rank among hardy native vines, not in your latitude, possibly, but north of New York. We do not claim for it that it is always equal, in every respect, to the Isabella, although many good judges have so pronounced it. But it is of "good" quality, to say the least, and is, invariably, from fifteen to twenty days earlier than the Isabella, with the same exposure, soil, &c. Mr. Chorlton has, on two occasions (in 1856 and 1857), expressed to me an opinion quite favorable as to its merits, generally, and particularly in favor of its being a first-rate wine grape. It will surely surpass the Concord in many desirable points.

Col. Wilder has so far signified his tardy adherence to "our side," as to order from the nursery of J. Mason & Co., of Hartford, this fall, two dozen Hartford Prolifics—a part for fruiting, and a part for propagation.

"*Jam satis.*"—Perhaps I am trespassing upon your time and patience. [Quite the contrary.—Ed.] Yours, respectfully, DANIEL S. DEWEY, Hartford, Conn.

ENGLISH WINE.—At a late pomological meeting in London, Mr. Wilkins handed round some wine, which he said had been manufactured from his roots of Mangel Wurzel, and was but ten months old. "This," says the *Chronicle*, "for a light wine, was certainly very excellent, and, Mr. Wilkins declared, could be retailed at a profit at 6d. per quart bottle. A practical chemist from London stated his opinion that all it wanted was an astringent, which Mr. Wilkins said he had discovered in the hop root, and which would render it a wholesome beverage. We also tasted bread made of one-third of Mangel Wurzel and two-thirds flour, and which was certainly fully equal to the average quality." [We trust none of this wine will find its way to America.—Ed.]

PRUNING THE VINE.—If gardeners would consult the spade as well as pruning knife, they would avoid disasters. To prune skilfully, a vine planted unskilfully, is like richly furnishing a house built on sand; the foundations give way, and the decorations are crushed in the general ruin. So far as vines are concerned, it would be better to leave them unpruned than to plant them in earth they cannot feed upon, or in places where their roots gangrene at the extremities. The vine requires a strong, dry, warm soil, and people plant it in a light, wet, or cold border. How can the knife make such vines thrive?

GARDEN FERNS.—It gives us pleasure to refer to an article, in the present number, on ferns; these plants will sooner or later become great favorites with true admirers of the beautiful. Most lovers of a garden contrive to have something a little varied from last year in a part of their grounds. "What have I to do with thee, dull, unjoyous constancy?" sings an old poet, and with some show of reason. Perhaps nothing that will cost less, these hard times, would be more satisfactory than to collect all the hardy ferns from the neighborhood, one or more of each according to the space to be occupied. The situation must be shady, but not wet; neither must it be entirely dry, for though ferns may be seen growing in the hot sun, as a rule they attain their full luxuriance only in the shade.

In addition to the extreme beauty of the foliage, the easy cultivation of most of the plants comprised in the class Cryptogamia, should induce horticulturists to add many of these truly beautiful objects to their collections. We always place a high estimate on the taste of the possessor of a fernery; a hardy one forms a pleasing and attractive feature in garden scenery, and the fine foliage of many of the strong growing kinds produces a glorious effect when seen floating in the breeze. The shape and extent will be best dictated by the owner's fancy, but one thing that is essential, is at least a foot in depth of suitable soil in proximity to the roots. The soil which suits most ferns of moderate growth, is three parts of rather light, fibry peat, and one part turfy loam, not of a stiff character; or leaf mould will be found to answer. This should not be made fine, but used on the surface; if rough pieces occur, so much the better; the finer should be placed nearest the roots. On the surface may be placed blocks of old wood, roots of trees, stones, or anything of a rough appearance, which not only gives a rustic feature in keeping with the plants, but is a direct means of retaining moisture.

The distance between the plants may be three feet for the strongest kinds, and a proportionate distance for smaller; but remember the shade.

It is announced that Dr. Grisebach has undertaken the preparation of a complete *Flora of the West India Islands*, in aid of which the English Treasury has granted £300. A botanist more qualified for the work could hardly have been selected.

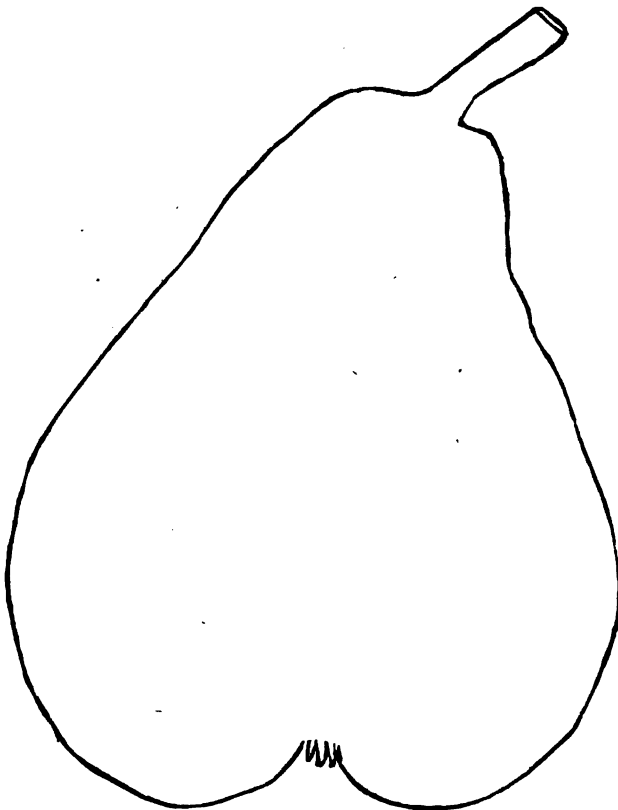
We also learn, from Hooker's *Journal*, that Mr. Chas. Wilford, lately one of the botanical assistants in the herbarium of the Royal Botanic Gardens, Kew, has joined the British Mission to Japan as collector of plants for that establishment. Let us hope that circumstances

will favor his carrying out successfully the object of his mission. In a horticultural point of view, Japan is one of the lands of promise.

The *Flora of the Cape of Good Hope* is reported to be taken up in earnest by Prof. Harvey, of Dublin, who long resided in the colony, and whose materials for the purpose are most ample.

Robert Hogg, of London, has issued Parts 1 and 2 of a *Natural History of the Vegetable Kingdom*, which is well spoken of. It is arranged on the system of Decandolle, and is illustrated.

NEW PEAR—BEURRÉ CLAIRGEAU. By R. Buist, Philadelphia.—I send a fine specimen of this superior large pear; its acquaintance will be worth one year's subscription to your friends—ripe in all October. It does well as a dwarf, and the fruit is as fine 12 inches from the ground as 12 feet; not so with many other sorts, viz. :—



Beurré Clairgeau.

Beurré Capiaumont does not succeed as a dwarf; neither fruit nor foliage remains perfect on the tree 6 feet from the ground, but the same tree, when it reaches the height of 8 to 16 feet, is a perfect picture of luxuriant foliage, golden fruit with garnet cheeks and fine quality; large, full, and plump; no deformity; so that the same tree in the months of August and September has no foliage near the ground, with fruit cracked, hard sided, black spotted, with a top lustrous with green foliage and pendent with its golden fruit.

We are only in the infant state in regard to fruit culture in this thinking country? Our people will yet be the first fruit growers of the world, and there is no impracticable feature in the banks of the Schuyl-

kill to Port Clinton being all vineyards; even the eastern slopes of the Alleghanies will make admirable vineyards. Your grandchildren will see it, and drink the wines therefrom.

A GARDEN JUNGLE.—A correspondent who loves the ornamental, and succeeds in all he undertakes, writes thus: "The most successful thing I had, this year, was a large circular

bed, fifteen feet in diameter, which we called our *JUNGLE*, filled with *Canna major*, Arums, Bananas, from the conservatory, the three *Dracenas* (*ferruginea*, *terminalis*, and the large-leaved one), *Musa Cavendishii*, and the different Aloes and Yuccas, all planted closely in the ground, a little raised in the middle; they looked, I assure you, perfectly tropical. We only wanted a Palm-tree in the centre, to have imagined ourselves with you in Cuba. You have made us almost crazy by your botanical descriptions of that island; as soon as everything gets settled at home, we shall sail for that "fairy isle," and take the *Horticulturist* for the last six months for our guide-book. We have got a little tired of Black Hamburgs and Muscats, and want to eat oranges off of the trees, and see a twenty-acre lot of Pine-apples, an Aloe hedge, and a real sugar mill." [Glad to hear it. Go if you can, and are in want of a new sensation.—Ed.]

GOSSIP.

— A REALLY well-flavored wine can only be obtained from grapes at a point of perfect ripeness. In countries where the vintage begins everywhere on the same day, much wine is necessarily pressed from the unripe or over-ripe fruits. Tokay is extracted from grapes which have been not only allowed to get over-ripe, but partially to dry upon the vines. When the grapes are allowed to dry on the vines, the wine is called dry wine; when they are dried on straw, straw wine; when the juice is evaporated by heat, boiled wine; cane-sugar, beet-root, or potato syrup, is introduced; nor can the admixture be afterwards detected. Raisin juice often enriches the poorer German's bottle, in which fermentation is rarely produced; chalk extracts the free acids. Professor Mulder tells us, the custom formerly prevailed in France of allowing a working-man to go into the vat, the temperature of his body promoting fermentation; individuals were thus killed by the carbonic acid.

— Parrots are known to love wine; it makes them very jolly and talkative. Pliny mentions this: "She loveth wine well, and when she hath drunk freely, is very pleasant, playful, and wanton." It is a question whether birds do not, in some degree, at least, understand what has been taught them. When dinner was brought up in the presence of a parrot, she was in the habit of crying: "Bring Polly's sop," till something from the table was given to it. If a bottle of ale or wine was brought in, it would say: "Waiter! waiter! a bottle of wine, and a cigar." The bird would shuffle after a dog, crying: "I'm coming! I'm coming!" The aptness with which it applied the words to the object, confirmed the impression of her understanding their import.

— By the spread of education—real education of the mind and manners of man—many facilities of enjoyment are given at a cheap cost, within reach of multitudes. By this means, the book of nature is laid open before him, and he is enabled, with a little self-control and perseverance, to taste some of those innocent pleasures which give double value to the green fields and fresh air of his holiday. Some knowledge of the birds and flowers is within reach of the humblest observer who can win some minutes from toil and trouble to breathe the air of freedom.

— "We have," says the *London Chronicle*, "from Mr. Rivers, specimens of the true old Golden Pippin, gathered from a tree eighty years old, planted by his grandfather. They have the same delicious smack that gave the sort so great a reputation. The young trees grafted from the old stock are more healthy than they have been for many a long year; nor, indeed, have they for some years been so subject to canker as they used to be thirty or forty years ago. We cannot but wonder that those who place fruit-trees on a level with the supplemental noses of the great Taliacontins, should not have remarked that the so-called wearing-out of races is unknown in the warm climates of continental Europe."

— At the late fair at Stockton, California, among the prizes offered was a \$50 dress to the unmarried lady who made the best loaf of bread.

— A fruitful source of injury to many plants in greenhouses, is allowing them to stand on a damp medium, which often clogs up the drainage, and injures the foliage by a miasmatic vapor that frequently rises about them, especially when the house is shut up.

— In a grapery, if you have the space, it is not a bad practice to have two vines to each rafter. Allow one of these to bear as much as it will, and, when exhausted, remove it; cut the other down in the winter pruning, and take only a little fruit from it for two or three years, in the usual manner.

— Plants of *Dielytra spectabilis* raised from seeds, are much more prolific of flowers than from cuttings.

— There is no plant that would appreciate the use of liquid manure during the rest period. It has been given, for experiment's sake, to *Justicias*, *Veronicas*, &c., under pot culture, and to apple-trees and gooseberry bushes, in the open ground, while in a dormant state; but in no case has the result been in favor of its use.

— Ransoms' artificial stone has attained considerable celebrity in England. Professors Henry Faraday, Hunt, and Garrod, Sir Henry de La Beche, Mr. Phillips, the geologist, and many other eminent scientific men, have described it as one of the most useful inventions of the age, not merely for garden decoration, but for the manufacture of mill-stones, filters, and for all architectural and building purposes for which stone would otherwise be employed. It is much used for garden ornaments, which are beautiful and cheap.

— Some readers will doubt when we tell them that fine white candles, of the best quality, are made from the peat of the Irish bogs, and yet it is true. The average thickness of this peat is twenty-five feet, nowhere less than twelve, and never exceeding forty-two. The chemist converts it to paraffine, and this is an admirable substance for making candles. These former fuel mines are estimated to extend over 2,900,000 acres, and, by this process, the land will become tillable. We have seen the candles in Philadelphia; they rival the best wax-lights in brilliancy of combustion.

— The revenue from perfumes equals 200,000 dollars a year in England. So enormous is the consumption, that *flower farms* are now established; they exist both in Europe and Asia, and another is to be established in Australia. England has her flower farm at Mitchum, in Surrey, where lavender and peppermint flourish unrivalled. Roses are also cultivated there, merely for the purpose of making rose-water.

— In the preparation of some wines, the skins and stones, and, in some cases, the stalks, are allowed to ferment with the juice, the purple and white skins yielding tannic acid, while only in the former does any coloring matter exist. A considerable quantity of white wax may be obtained from grape-skins by means of boiling alcohol. The stones are remarkable as containing a considerable quantity both of tannic acid and a fatty oil, the amount of which Ray reckons at more than ten millions of pounds weight, annually, for France alone. He considers it as well suited for food as for burning. Bender, of Coblenz, convinced himself that it was not worth the expense of pressing. Zeimer found it disagreeable to smell and taste; but it has been suggested by others to roast grape-stones, and use them instead of coffee. The stalks have a sharp, astringent flavor, and if treated with water and salt of oxide of iron, yield tannic acid.

— Certain tribes of mosses take possession of the scanty soil formed by lichens, and more rapidly increase its amount; while others, of aquatic habits, convert shallow pools into quaking bogs, and create, in time, vast accumulations of vegetable matter, in the form of peat. These are truly *servi*, as Linnæus termed them—servants to the nobler plants which soon succeed them. For then come the ferns, the colonists, after lichens have furnished them a foothold on the rocks, or mosses given them one in the spongy and unstable

morass; these are the precursors of grasses, rushes, and other plants of more immediate importance to man and the higher animals, but which never would come to perfection if left, like their humble but indispensable predecessors, to draw an unaided subsistence directly from the inorganic world. It is thus that the bare earth is at length enabled to support the sturdy forest, or the rich field of waving grain.

— As you ramble through the corn-fields, and see the shadows running over them, remember that every cloud which floats in the blue deep, retards the vital activity of every plant on which its shadows fall. "Look on all flowers, fruits, and leaves," says Blumen, "as air-woven children of the light. Far away blazes that great centre of force, the sun, which spans those millions upon millions of miles, and brings us and the sun together. From it issues the mystic influence, striking the electric chain wherewith we're darkly bound. For myriads and myriads of years has this radiation of force gone on; and now stored up force lies quiescent in coal fields of vast extent, once all pure sunlight, hurrying through the silent air, passing into primeval forests before man was made, and now lying black, quiet, slumbering, but ready to wake into blazing activity at the bidding of human skill. From light the coal-fields came; to light they return. From light come the prairies and meadow-lands, the heathery moors, the reedy swamps, the solemn forests, and the smiling corn-fields, orchards, gardens; all are air-woven children of light. Now we understand why men are sickly and stunted who live in narrow streets, alleys, and cellars, compared with those who, under similar conditions of poverty and dirt, live in the sunlight. In bright sunlight, as much as one-fifth more carbonic acid is expired than in feeble light. And have not all farmers and cattle breeders unconsciously paid tribute to this principle, by keeping their animals in the dark to fatten them?"

— Notwithstanding the variety in the quantity of sensible moisture present on different days, in the Eastern States, the average of this condition is very low, no forms of vegetation indicating its abundance. Forests are free from mosses, except at the elevated points, and for the Central States, the forms of succulent vegetation are very much restricted, the grasses and other things giving evidence of aridity as the distinguishing feature, and failing to cover the surface with a constant growth. The limit of this permanence of the English grasses without cultivation, is about the 40th parallel; and soon after leaving Philadelphia southward, they become sensitive to the aridity of summer, and require careful cultivation. South of the 38th parallel, they are difficult to possess under any circumstances.

— A curious bet was made, a hundred years ago, between Lords Rockingham and Orford, for five hundred guineas, as to whether five turkeys or five geese would in the shortest time perform a journey from Norwich to London. The result indicated Lord Orford's sagacity, for, though at first the turkeys had it all their own way, the geese waddled past them at night, while they were lazily roosting in the trees, beside the hedgerow. There is a moral in this which the reader will readily apply.

MISCELLANEA.

GRAPES IN CALIFORNIA.—As a source of future revenue to the State, it may not be inappropriate to state that the wine interests are receiving a new impetus. A company has been formed, the sphere of whose operations is in the vicinity of Los Angeles, and preparations are in progress for cultivating the grape on a scale unequalled in any of the most favorite wine-growing countries. The Directors of the Los Angeles Vineyard Society held a meeting in this city a few evenings since, and had occasion to sell four shares of their stock. These shares, which are worth \$750 at par, were sold at \$795. The stock is not in the market for sale on speculation, and the shares are held mostly by persons who intend

to make their homesteads on the land already purchased by the Society on the Santa Anna River, in Los Angeles County, as soon as the vines shall begin to bear.

Tobacco is also a product which must hereafter receive much attention. Experiments have fully proven the adaptiveness of the soil of many portions of the State. The soil and climate of the Sacramento Valley, as well as that of the southern counties, is admirably adapted to its growth. The same may be said of cotton, which eventually must become one of our leading staples. A company has also been formed for the prosecution of the rice culture, and a large tract of land is now in process of preparation, in San Joaquin County, with this view.—*San Francisco Shipping List.*

SYRIAN PEACH.—At the late British Pomological Society, Mr. Veitch exhibited specimens of the Syrian Peach—the type of a new race of peaches, as the Stanwick is among Nectarines. It has a small kernel. The flesh separates freely from the stone, is very melting and sweet, and has a remarkably fine and rich flavor.

NEW CHERRY.—At the same time, Mr. Rivers brought specimens of Belle Agathe Cherry—a variety about the size of a Merry, and heart-shaped, with a firm, Bigarreau flesh, and of excellent flavor. The color is dark red." A Cherry in October is valuable, and one which the birds and insects will not touch, is doubly so. Belle de Septembre Plum is a very excellent kitchen variety, with rather more flavor than kitchen varieties usually have late in the season. We have seen it cooked, and its juice is of a beautiful, lively crimson, as if colored with cochineal. It also makes an excellent preserve."

EUGENIA Ugni.—The report of the meeting, in the *Cottage Gardener*, says: "Mr. Turner brought a dish of the fruit of *Eugenia ugni*, grown at Slough, in the open air. They were the size and shape of the berries of the Hawthorn, and pretty much the same color, but perfectly ripe. The taste is that of the Black Currant flavored with allspice, and without its prevailing acid, being, in fact, rather sweet. This fruit is certainly very agreeable to taste, but we do not think it is one which can be eaten to any extent, or which will establish itself as a recognized fruit in this country. It wants succulence, as its substance is rather dry. When novelty has passed, and other subjects have engrossed public attention, *Eugenia ugni*, as a fruit-bearing shrub, will, in our opinion, retire to enjoy a quiet respectability among other half-hardy exotics. Should it be otherwise, the taste of the fruit-eating portion of society must materially alter." [This statement has, we see, brought out dissenting remarks, some declaring the fruit exhibited was not ripe.—Ed.]

Fruit-Gathering Instrument.—At the same time, was exhibited a fruit-gathering instrument, thus described: "The apparatus consists of a rod, which may be of any length (say six feet or three feet), and on the end of it is placed a movable contrivance composed of two rings, which meet and part like a pair of shears, and these rings are covered with a disk of vulcanized India rubber. They are worked by means of a sort of trigger, which is at the hand end of the rod, and when they clasp the fruit, the two disks of India rubber yield to the pressure, and the fruit is gathered uninjured. In place of these disks, Mr. Jones can also fix a netted bag and a cutting and holding apparatus for gathering grapes. This is a very desirable invention, and cannot fail to come into general use among amateurs and ladies who do not care to mount a ladder, or risk the safety of their necks by practising gymnastics up a pear-tree." [Is not this very much the same as one patented in America?—Ed.]

USES OF THE POTATO.—In France, the farina is largely used for culinary purposes. The famed gravies, sauces, and soups of France are largely indebted for their excellence to that

source, and its bread and pastry equally so; while a great deal of the so-called cognac from France is the produce of the potato. Throughout Germany, the same uses are common; and, in Poland, the manufacture of spirit from the potato is a most extensive trade. "Stettin brandy," well known in commerce, is largely imported into England, and is sent from thence to many of our foreign possessions as the produce of the grape, and is placed on many a table of England as the same; while the fair ladies of our general country perfume themselves with the spirit of potato under the designation *Eau de Cologne*. But there are other uses which this esculent is turned to abroad. After extracting the farina, the pulp is manufactured into ornamental articles, such as picture-frames, snuff-boxes, and several descriptions of toys; and the water that runs from it in the process of manufacture, is a most valuable scourer. For perfectly cleansing woollens and such-like articles, it is the housewife's panacea; and if the washerwoman happens to have chilblains, she becomes cured by the operation.—*Paper read before the British Association.*

A "MODEL" ADVERTISEMENT.—We take the following from an English paper: "J. J. Foster, after eight years' trial, has found the rose 'Descartes' the best for stocks. Price, 12s. per 100. Manetti stocks given away." Here is a starting-point for a horticultural "gift enterprise," certainly.

Notes for the Month.

JANUARY.

THE VINEYARD.

BY R. BUCHANAN, CINCINNATI, OHIO.

PRUNING the vines may be continued in any mild or moderately cool, dry weather during this month. No injury to the vines has yet been observed from winter pruning in good weather.

It is usual to rack off the new wine in this month. Select a clear day. Draw the wine off carefully, and put it into a cask made perfectly clean by scalding water, then rinsed out with cool water, and fumigated with a sulphur match. The lees are thrown on the manure pile, or given to the distillers with the pomace of the grapes, to make brandy. In the vicinity of a large city, the lees sell at thirty to forty cents per gallon, and the pomace at \$1 50 to \$2 per barrel. About five or six gallons of the former, or one and one-third barrel of the latter, will make a gallon of brandy. The distiller retains one-half for making it.

Examine the wine every week or ten days, fill up, and keep the casks bung full, and the bungs tight. Nothing else is requisite until May, when the second fermentation takes place; then the bungs are to be left loose, that the gas may escape. In eight or ten days this fermentation will cease; the casks are then to be filled up, and the bungs, with clean linen rags wrapped around them, driven tight.

BY WILLIAM SAUNDERS.

VEGETABLE GARDEN.—In choosing a situation for the culture of vegetables, that which affords the most shelter should have a careful consideration. The best situation and aspect is one having a southwest slope, backed on the north and east points by a shelter of trees sufficiently distant to break the force of winds without interfering with the crops. This is perhaps of more importance than the natural adaptability of the soil. The operations of culture will constantly tend to alter and improve the soil. A free loam will be found most suitable, and if resting on a somewhat clayey subsoil, it will produce heavier crops, and require less manure than where the subsoil is of a gravelly or sandy character. Draining will be indispensable as a permanent foundation for the gradual improvement and amelioration of such soils. A clayey soil also requires more care in its cultivation, but this will be more than counterbalanced by its capacity of production. Light, sandy soils are, in general, earlier; much, however, will depend upon the situation. A clayey loam, well

drained and sheltered, will be at least as early as a sandy loam on an exposure; and the great superiority of the former, for general purposes, is such as to render it the most desirable. A principal feature in the management of clayey soils, is to turn them over roughly, exposing as much surface as possible to the action of frosts. This is a very important matter, and has the effect of rendering clayey soils capable of being cropped as early as those where sand predominates.

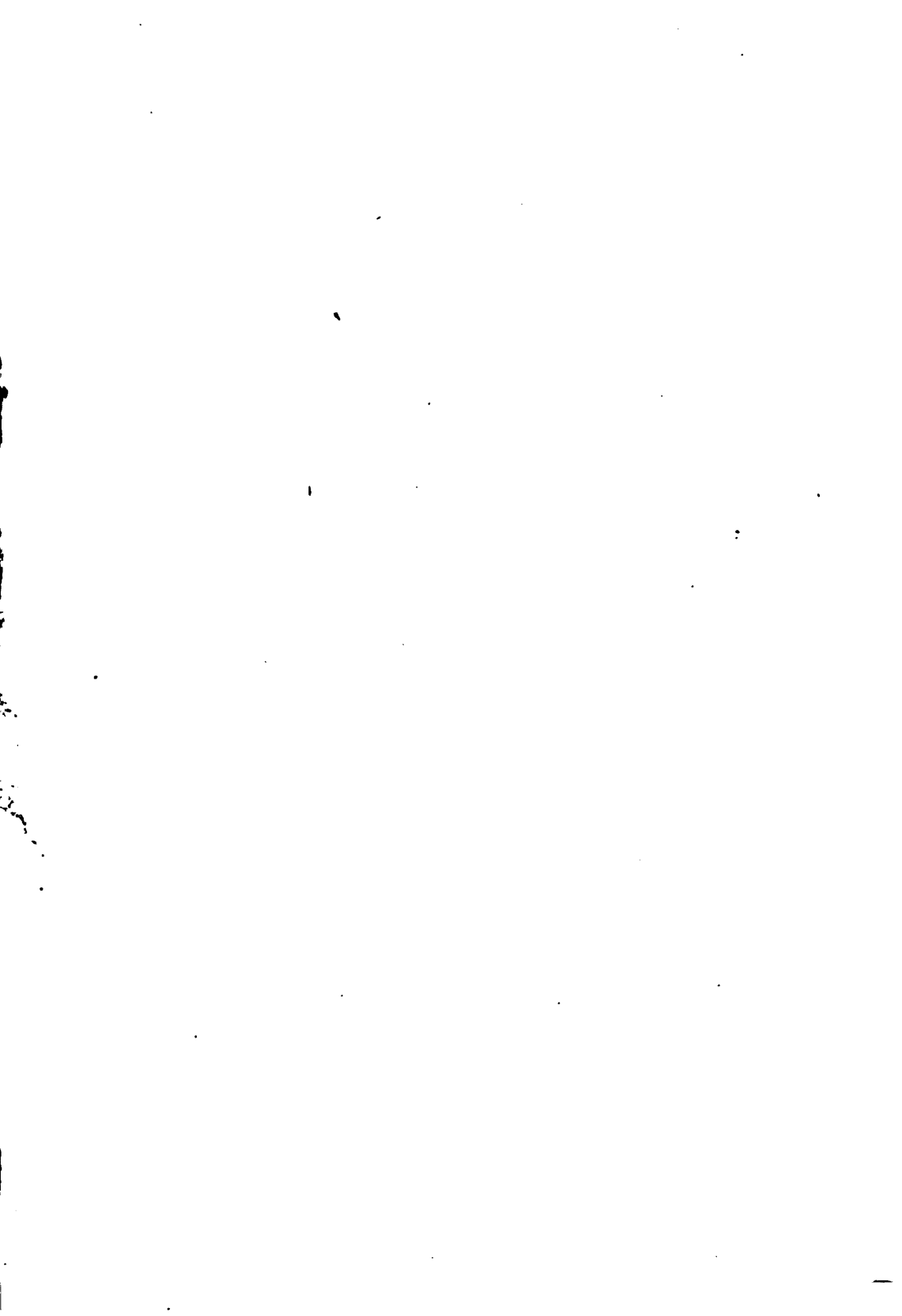
FAUIT.—Fig-trees are not sufficiently hardy to stand northern winters without protection; they may, however, be preserved, by bending them down, and covering with soil. They are rather rigid when they get old, but a slight twisting will rather improve their fruiting. They may be grown in pots or boxes, preserved in the cellar, or under a greenhouse staging, during winter, and set out on the lawn, in a sheltered position, during summer. When the leaves fall in autumn, they should be kept dry until growth commences in spring. Poor soil is best for them, and water copiously during growth. Orange and lemon-trees may be wintered in cellars, but they must be kept dry, unless the air is dried artificially, when they may require an occasional application; they will stand many degrees of frost when the soil is kept dry. It is related that, on opening a house in Paris which had been closed for two years, several orange-trees were found alive, although they had not received any water or artificial heat during that time. There is reason to believe that they may be preserved, during winter, in barns or out buildings, if kept dry and dark.

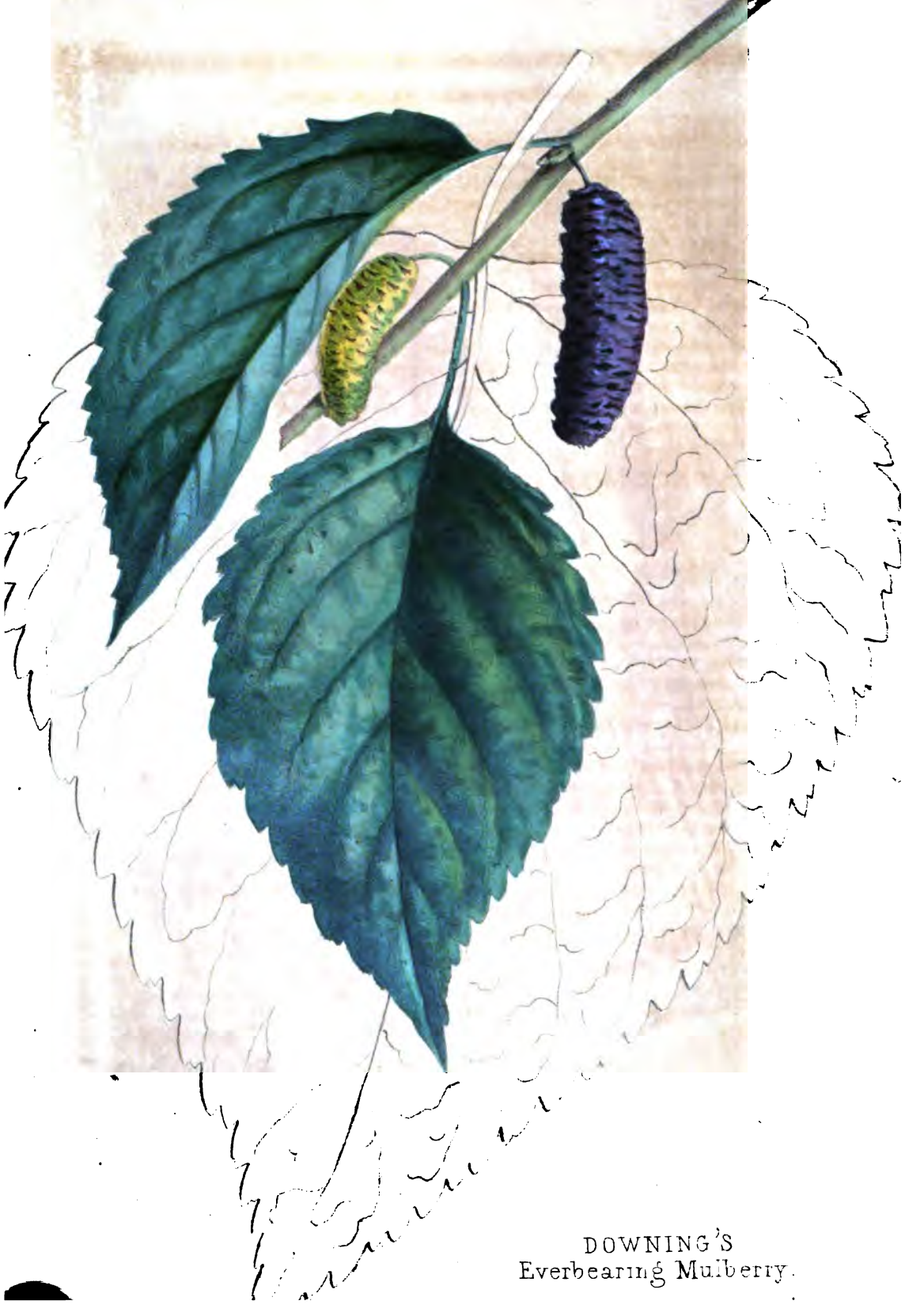
GREENHOUSES.—Spring flowering bulbs are a great attraction in a greenhouse, and their management a simple matter. About September, the bulbs, having for some time previous been dormant and dry, should be repotted, and set up on the shelf, water being applied in increased quantities as they proceed in growth. Early in spring, they will be in flower. Towards the end of summer they will lose their foliage, and rest for a period, and undergo a similar routine of treatment. *Lachenalias*, *Ixias*, *Babianas*, *Sparaxis*, *Alstromerias*, *Hesperanthas*, and *Oxalis*, are the kinds alluded to.

The management of the atmosphere, with regard to ventilation and humidity, will now be an important consideration. In artificial temperatures there are, constantly, numerous counteracting agencies at work, destroying the natural purity of the air, either by the formation of injurious gases, or extraction of moisture; the latter was a frequent, unsuspected cause of failure. There are few houses supplied with a hygrometer, although it is as much necessary as a thermometer, the proper balancing of the atmosphere, with regard to moisture, being equally important to the health of plants as the degrees of heat and cold.

Extraction of moisture is the principal cause of disarrangement in the atmosphere. As the temperature rises, the capacity of the air for containing moisture increases, and if not supplied by other means, this water will be extracted from the plants. The amount of water carried into the air will be seen by the deposition of ice on the inner surface of the glass after a frosty night. Shallow pans containing water, should be kept on the flues or hot-water pipes; for, although the latter radiate heat at a lower temperature than brick flues, they supply no moisture. The common say that "pipes gives out a moist heat," has no foundation in truth.

PLANTING TREES.—The system of removing large trees with balls of frozen earth, is frequently practised, and occasionally may be recommended; but is a very expensive process, and by no means justifiable as a general system. No amount of soil, frozen, or otherwise, will compensate for the destruction of roots, and to remove all the soil occupied by them is simply impracticable. The larger and older the tree, the further will the roots extend, and, consequently, the fewer of them can be secured in a limited space. There is great want of discriminating judgment shown in this matter of lifting large trees. It seems to be an opinion with many that, provided they lift a ton or two of soil with a tree, success must be certain. The stunted appearance of such trees, even if they live, ought to convince planters that the process will not pay. *To secure a healthy growth, the branches must be reduced in a corresponding ratio with the reduction of roots.* It is roots, then, and not soil, that ought to be removed; and the roots can only be traced and secured when both the soil and the air are free of frost. The amount of pruning that the branches require, must be left to the judgment of a competent and experienced planter. During the progress of removal, he will ascertain the amount of root mutilation, and he will be further guided by the kind, age, and health of the tree that is being operated upon, all of which will exert a special influence in controlling his future management and care. Occasionally, we meet with instances where success has been all that could be desired; but all practice not founded upon principle is empirical. Such practice may be successful, because it may, by chance, be founded upon a natural law; but this being unknown, no continuance of success can be secured, and all the future is uncertainty.





DOWNING'S
Everbearing Mulberry.

Life in the Desert.



on the desert, I am a slave
 In form of one kind or another, as I
 In power of the divine pleasures that I
 In heartiness, too, a far too make, and
 In the poor, whilst the wind and rain

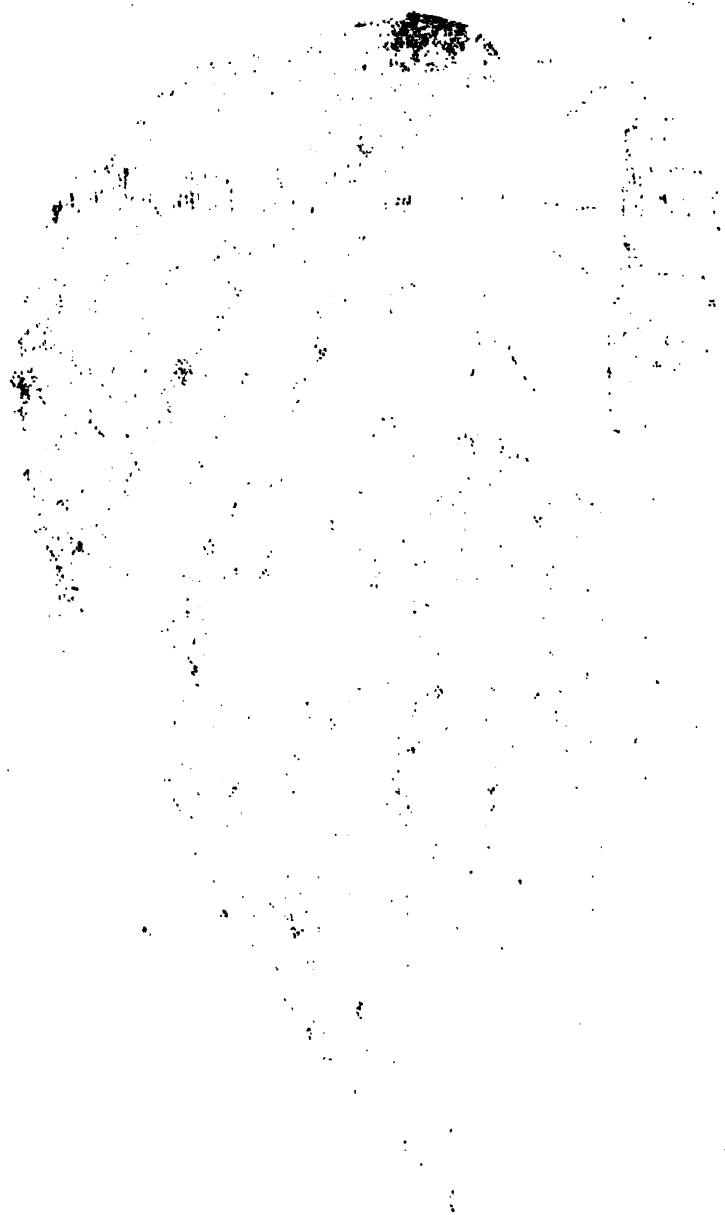
"And at the last, and with a sigh
 A last, and with a sigh
 In the last of the fall they
 Will be seen, and now out of the

1875

"And these are items of the desert, of a white
 In fact, but to everybody, I am a slave
 In power of the divine pleasures that I
 In heartiness, too, a far too make, and
 In the poor, whilst the wind and rain
 In the last of the fall they
 Will be seen, and now out of the
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Life in the Country.—Winter Enjoyments.



NE of the favorite authors of English literature has described the pleasures of country life somewhat after this charming fashion: "Let the house be a cottage, embowered with flowering shrubs, so chosen as to unfold a succession of flowers upon the walls, and clustering around the windows through all the months of spring, summer, and autumn—beginning, in fact, with May roses, and ending with jasmine. Let it, however, not be spring, nor summer, nor autumn, but winter, in its sternest shape. This is a most important point in the science of happiness; and I am surprised to see people overlook it, as if it were actually matter of congratulation that winter is going, or, if coming, is not likely to be a severe one.

On the contrary, I put up a petition, annually, for as much snow, hail, frost, or storm of one kind or another, as the skies can possibly afford. Surely, everybody is aware of the divine pleasures which attend a winter fireside: candles, warm hearth-rugs, tea, a fair tea maker, shutters closed, curtains flowing in ample draperies on the floor, whilst the wind and rain are raging audibly without,

"And at the doors and windows seem to call,
As heaven and earth they would together melt;
Yet the least entrance find they none at all—
Whence sweeter grows our rest secure in massy hall."

Castle of Indolence.

"All these are items in the description of a winter evening, which must surely be familiar to everybody born in a cold latitude; and it is evident that most of these delicacies cannot be ripened without weather stormy or inclement in some way or other. You need not be particular whether it be snow, or frost, or wind so strong that (as some one has said) 'you may lean your back against it like a post.' Something of the sort I must have, and if I have it not, I think myself in a manner ill-used; for why am I called on to pay so heavily for winter in coals, candles, &c., if I am not to have the article good of its kind? No; a Canadian winter for my money, or a Russian one, where every man is but a co-proprietor with the north wind in the fee simple of his own ears."

There are many who will recognize the value of such scenes; for ourselves, we confess to its pleasures, but a little milder would be more to our taste. The whistling of southern breezes rushing up the valleys, and quickening with their warmth the early flower—the budding lilac and syringa—the opening leaf of the sturdy oak—awaken in our breast that balm to man's pilgrimage, the ever open-handed boon to our earthly thoughts, hope. In the cold winter, we are thrown altogether upon our own resources. In the spring time of year, all nature rejoices us as a companion; her florets gem every twig; each day brings new beauties, each month new fruits, that are better than candles, coal, and curtains. But yet, to us, born to the rigors of frost, and writing, as we are, in the midst of its biting, enjoyment is not cut off.

This is the time to study man, and to gain some little more insight into nature's workings; books of botany, and histories of birds, of insects, the growth, and the legends of trees, are resources for the winter evening. A pursuit of some kind most surely cheers the wintry night. Do our readers remember how thoroughly happy they have been when something was *going on* of a winter's evening, the family, may be, assembled round a blazing hearth, and all engaged in paring

apples? or constructing some rustic piece of furniture for the approaching spring? It is sufficient to produce the enjoyment our pleasing author has shadowed so well, that all hands should be employed in what interests the mind; something doing, something done, accomplished, time not thrown away, sends all hands happy to their rest.

In northern climes, where the days are shorter than in the more tropical regions, this species of comfort and pleasure is better known than in southern lands. The family makes preparation for the longer period of darkness, and assembles round a fire common to all. One perhaps reads while the others work, and from this period of their lives they produce the ornamental objects which embellish their home, or those numerous small wares which load down every vessel's deck that leaves an Eastern port. Such—either intellectual pursuits and pleasures, mechanical employments, or, better, both combined—should all aim at, who desire to hail another day with energy for renewed exertion, and in good humor with their fellow creatures.

DOWNING'S EVER-BEARING MULBERRY.*

BY L. B.

THIS truly distinguished fruit, so different from the other American Mulberries by its rich, subacid taste, was obtained from the seed of the *Multicaulis* by our worthy and experienced pomologist, Chas. Downing, some twelve years ago, in his experimental grounds, near Newburgh. The tree is very vigorous, hardy, and productive. Its foliage is large and fine, making it altogether an ornamental as well as a very useful tree. It comes into bearing the third or fourth year, and the fruit increases in size as the tree attains a more mature condition. The fruit ripens in succession, from the 1st of July to the beginning of September, producing a never-failing crop of the most luscious fruit, highly valued by all who have had an opportunity to taste it, and making a fine dessert, and a most delicious pie or pudding fruit.

Size of the fruit from over one inch to one inch and a half in length—about half an inch in diameter; larger under good, rich cultivation. Color, purplish-black, with small, fine grains, of a delightful, rich, subacid taste. The outline of the leaf is that of a middle-sized one.

THE DELAWARE GRAPE.

BY N. LONGWORTH, CINCINNATI, OHIO.

A ROOT of the Delaware Grape was sent me about ten years since, by an intelligent citizen of Delaware, in this State, who informed me that it was brought there several years before by an emigrant from New Jersey, who stated that it had been there cultivated for many years by an emigrant from Europe, and from that circumstance deemed to be a foreign grape. When in bearing in my garden, all my German vine-dressers pronounced it the best German wine grape, the Traminer. As I have never found a foreign grape that would succeed in our soil and climate, I was doubtful if it could be of foreign origin. But if a native, it proved of less vigorous growth than any native grape that I have seen. I never kept but three or four vines, and the one sent me about ten years since has not increased in vigor of growth. It produces a wine of good, but not, as far as tested, of superior

* See Frontispiece.

quality. In one of my vineyards there are several vines, and some wine made from the grapes yearly. When first assured of its being the Traminer, I thought of planting it as a wine grape. From its delicate growth, had I done so, I should have planted it as vines are planted in vineyards in many parts of Europe—three feet between the rows, the plants in the rows two feet apart. The bunches and berries are small, but of superior quality as a table grape. I regret that I have not planted its seed, as I have a seedling of the Isabella Grape of fine quality, that, in the open ground, bears berries larger than the largest European grapes, even when raised under glass, and the bunches of large size. From the Delaware, a like improvement would probably occur. It will be our own fault if we do not, in a few years, equal, if not surpass, the best table and wine grapes of Europe, by planting the seed of our best native grapes, and not by following the advice of some wise European writers, who say “that if we wish to improve the quality of our pears and apples, we must not do it by planting the seed of our best fruit, but by commencing with the seed of the crab apple and the choke pear, and improve by degrees.” This may have been a wise course in the days of Methuselah, when men lived a thousand years, but it is not suited to this period. A country that abounds in a thousand varieties of native grapes, should leave Europe in the background—where a native grape is never seen—both in table and wine grapes.

[The Delaware and Traminer are distinct grapes, and must not be confounded. It has been said that the demand for the former is met by some, not in possession of the Delaware, with Traminer. Purchasers should beware.—ED.]

HORTICULTURE, ETC., IN MISSOURI.

BY H. M. MYERS, BOONVILLE, MO.

FEELING a common interest with my brother *Horticulturist*, I have thought a few words from the far West might be of interest to your many readers, and, with your permission, I would occasionally give some notes on fruit culture from this State, believing it to be one of the best fruit countries in the United States. I have travelled and conversed with many persons in most of the States, and from my own observation, and from all the information I have, I come to the above conclusion. Now for my own actual experience. In the spring of 1844, I commenced my improvements; a place to live in, first. In the fall, planted my fruit-trees, and not a year has passed since but some new varieties, and those of the best I had, have been planted. In three years from the seed, my peach-trees averaged one bushel to the tree, and I had apples enough for family use, in the same time, from two years old grafts. I now have thirty acres in all the various fruits that grow in this climate, yielding me, after a bountiful supply for family and friends, a net profit of about two thousand dollars annually. My apple-trees will average (twelve years old), this year, twenty bushels to the tree, and are from two feet to two feet eight inches in circumference round the body, at two to three feet above ground; but few of the first peach-trees now standing. They are not long-lived here, but bear soon and abundantly for five to ten years, though some in this county are twenty-five years old; but the fruit is much better on young trees.

The Catawba Grape is much the best we have, and does finely, and will average (good and bad years) about two hundred and fifty to three hundred gallons of wine per acre. A few vineyards in this county have rotted (say one-half), but most of them are not as yet injured materially. I suppose twenty thousand gallons of wine will be made in this county this year (1857).

Strawberries also do well, yielding from fifty to one hundred bushels per acre. Hovey's are the principal crop.

All fruits do well here except the heart cherries and pears; they take the blight, and die in five or eight years, as a general thing. In my orchard of fruit-trees, I raise potatoes and low-growing vegetables for the first six or eight years; then sow down in red clover, and ploughing once in three or four years, so that the land is very nearly as productive as if no trees were on it.

Our crops of wheat, oats, and grass, in this State, were light; not half a crop. Corn (one of our great staples) will be abundant; hemp and tobacco, about half a crop.

Our railroads, or something else, have given a new impulse to business, and property is rapidly increasing in this State, though but little attention has as yet been paid to horticulture. I have tried to increase the circulation of your very valuable monthly in my vicinity; it will increase much in a few years, and I will continue my exertions in its behalf. We would be very much pleased to have you visit us this fall, during our Agricultural Fair. I think you would be pleased with the horticultural department.

DESIGN FOR A COUNTRY HOUSE.

BY MYRON B. BENTON, LEEDSVILLE, DUTCHESS CO., NEW YORK.

THIS design is calculated to embrace convenient accommodations for a large family, combined with some elegance, without any great outlay for a high style of finish. The building is plain, with but few additions simply for ornament, and is allied to the Italian in style of architecture. The object is to give some beauty and elegance of appearance, from the general shape or form of the building, rather than by elaborate carvings, bead-work, and other "hard-finish," which are a constant expense by requiring frequent repairs, as well as the great cost incurred in their construction from the high price of labor.

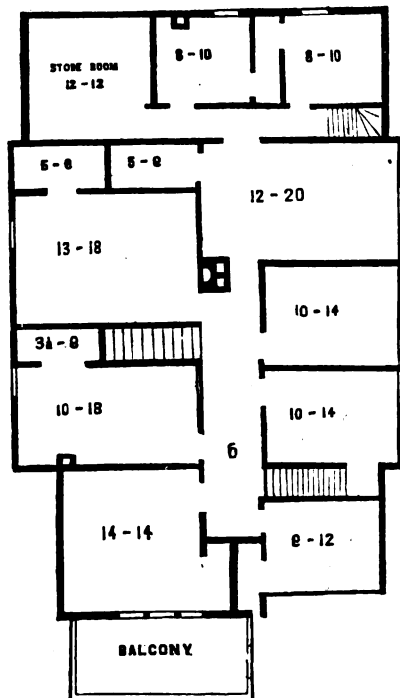
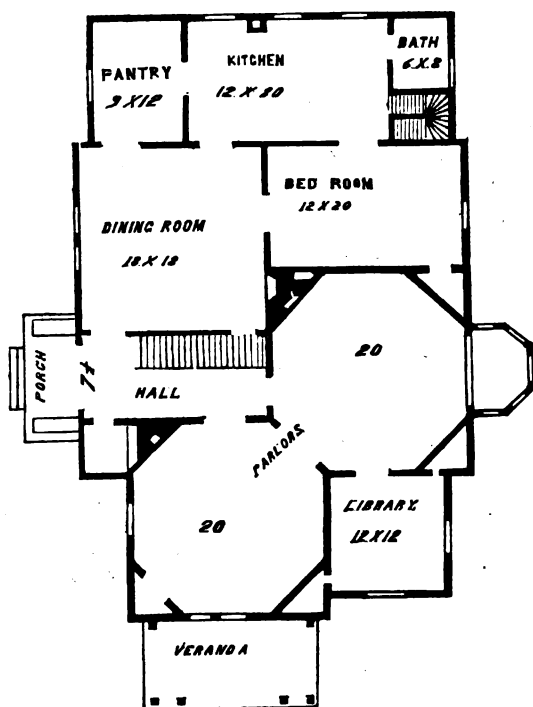
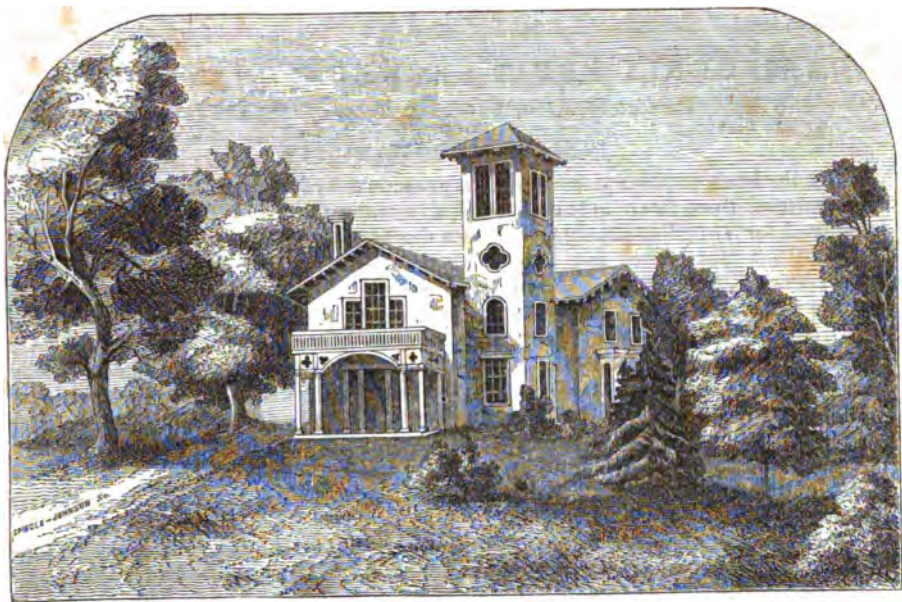
The approach is by the carriage way, which leads to the porch, from which opens the hall. The diagrams of the first and second floors will mostly explain the interior arrangement. Folding doors connect the parlors, which are octagonal rooms, each twenty feet from side to side. One of them contains a large bay-window, and from the other opens the veranda, by the triple window. The library occupies the lower part of the tower.

The chamber floor furnishes ten capacious apartments, with ample closet room. The stairway leading to the observatory opens from the passage. There would be another small room in the tower, immediately under the observatory, but above the second story.

The entrance to the observatory is through a horizontal door in the floor, which being balanced with weights, is opened with perfect ease by a cord in the stairway. When closed it forms part of the floor, and thus leaves the room unincumbered with a stairway.

This design could be varied to suit the wants of a family who wished a smaller and less expensive house, by leaving off the back addition, and substituting the kitchen in place of the bedroom. The library, in that case, could be taken for a bedroom.

It is difficult to give an estimate of the cost of constructing a house, in different parts of the country, and on different sites. The cost of this would probably be from four to five thousand dollars, according to various circumstances.



CALIFORNIA FRUIT-GROWERS' CONVENTION.

Held at Stockton, Thursday Evening, October 1.

FROM THE CALIFORNIA FARMER.

Not the least important part of the programme of proceedings for the State Agricultural Fair, lately held at Stockton, was the Convention of Fruit Growers, arranged for Thursday evening, "for free discussion and interchange of opinions."

Mr. Flint spoke of raising peaches on the Bay of San Francisco, on a soil of a sandy loam. At first his peaches had dropped off before maturing, and he was unable to raise a crop. As a remedy, in November he dug away the dirt from the trees, and applied ashes freely, and the next year the trees were loaded with an abundant crop of fine fruit. He recommended heading in, that the trees may be formed low, and the fruit should be shaded as much as possible. As our climate was different from the Atlantic States, where they have much wet weather throughout the year, our plans of operations were necessarily more or less different. He also recommended deep cultivation, and, as an example of its benefits, stated that by deep cultivation he had raised fruit successfully where previously grass would not grow.

Mr. Osborne, of Napa, agreed with the foregoing. At one time he lost a tree a week from some cause, and applied whitewash. For pears, he had applied salt with good effect. During the summer he would not plough too much among his fruit trees, but cultivate, without turning the surface under, and by this plan he killed out the weeds; if ploughed deep after dry weather came on, weeds would grow again, and the soil become very dry.

G. H. Beach, of Marysville, said he did not want to plough after the first of May, and was satisfied Mr. Osborne is right. The top soil should be kept loose. But deep ploughing, at the proper time, when preparing the ground, is the great desideratum; by using the subsoil plough, much less water is required for irrigation. He cannot get along without irrigation for fruit or vegetables. His soil is a sandy loam, and water twenty feet below the surface. If water is within five or six feet of the surface, no need of irrigation. His soil contains no alkali, consequently no bad effects resulted from irrigating; though too much water might tend to make the fruit insipid. In reply to a question from the Chair, as to what kinds of fruits succeeded with him, Mr. Beach said he had not had much success with apples; though he had found that mulching trees would prevent all sunblight, which at first affected his trees.

Question. Why not grow the trees low down?

Mr. Beach. Too much trouble, as it would be inconvenient to cultivate among them. In three or four years trees are past all danger from sunblight.

Chairman. What about Mr. Flint's suggestion of heading low?

Mr. Beach. There is a limit to it; if trees are formed too low, they are in the way; the limbs two feet from the ground would give room. His apple orchard is on too sandy soil to succeed well. The climate is the best in the world for grapes, which grow very sweet. Among the varieties he raised were Black Hamburg, Portugal, July and Catawba; the latter even sold well for a table grape. Of figs he had some dozen foreign varieties; the white will stand three degrees more of cold than the purple; the lower the land and plentier the water, the more liable to frost. He raised several varieties of white grapes.

Referring to figs, Mr. Osborne considered them the fruit of all fruits. Last year he obtained one White Ischia Fig, and now he had from it 300 trees growing

finely. Would not prune while sap is ascending. This fig was larger than any others. Those exhibited in the Hall were not genuine. The frosts of last year caused no injury. He has another fig which bears three crops a year. Those who thought the grapes of Los Angeles not so sweet as others, should try some when fresh, and not judge of them after they have been packed in redwood sawdust for several weeks. He loved the Isabella, as it reminded him of his old home and early associations. The frost last winter, though more severe than previously known, injured nothing but young orange-trees. Ice formed of the thickness of a sheet of paper, causing the Indians to exclaim, "*mucho frio!*" They had some 150,000 orange-trees, and 200 lemon. About 1000 acres of grape-vines are planted in a year, averaging 1000 vines the acre. In another year they would have in the county 3,750,000 vines. This is now their business; formerly it was cattle; but the "cattle on a thousand hills" have disappeared, and people have turned their attention to the vine. They make some raisins. Allowing one gallon of wine for each vine, at \$1 a gallon, ten acres would produce \$10,000, and, deducting \$2000 for expenses, would leave a net profit of \$8000. They had suitable land enough, if brought into cultivation, to produce yearly \$60,000,000 in wine. Their best grapes are raised on high gravelly land, irrigated.

Mr. Beach said he imported the Catawba Grape for wine, but many preferred it for dessert.

Mr. Osborne, of Napa, said, last year his foreign grapes were killed by frost.

A. H. Myers, of Alameda, said he thought there was no danger of over-planting fruit, though many people feared there was. Trees are continually being lost from various causes; many are killed by drought, &c. He said the number now planted cannot supply the market. We can also grow a great many varieties; we can grow all our almonds and raisins. There are ten large orchards in the State, and tenfold more cannot supply the demand for fruit. A great business could be made in dried fruit; he had dried peaches in the open air in three days. Then we may expect large accessions to our population, and we must grow fruit for those to come, as well as for our present population. A person can eat more fruit here with impunity than elsewhere. We should endeavor to produce new varieties, which in a few years we could ship to the East, and undersell dealers there in their own markets. People should bear in mind that there can be no glut of fruit here.

Chairman. At the East, good fruit maintains a high price, though the production is great: Winter fruit, when imported here, becomes fall fruit. We can get varieties from the Southern States to keep up our supply.

Judge Daniels said we should endeavor to find out the best varieties of fruit for our climate. He had had ten years' experience in California; for the present should confine himself to the subject of managing trees. When trees are planted in the fall, he had found it best not to cut the top at the time of planting, but to cut in the spring. He would not cut or pinch in the summer, when the sap is in full flow—decidedly not. Those opposed to heading trees low, probably did not wish to prune or pick the fruit without climbing, or prevent weeds from growing, or protect the trees from sunblight. But different varieties may be treated differently. With apples the Jenning and Alexander should be cut low, while the Bellflower and Esopus may grow more freely, as their limbs run horizontally. A low tree has a stiff stem, clean bark, and you can look over it better. The objection that you cannot plough under it has no weight, for there is no need to do so; it is not the place to plough, close to the tree, where the roots are near the surface; the fine fibres, which are the great supporters, are at a distance, and here trees should be irrigated, and not near the body of the tree.

Mr. Flint said that ashes applied to his trees saved them from the "curled leaf." The ashes were spaded in round the trees. As an example of the evil of training trees high, he mentioned the case of an extensive orchard of imported trees, planted five years ago. The trees were trimmed high, and had as yet produced no fruit of consequence, the dry rot being one evil. This result is equivalent to an immense loss, for if the trees had been properly managed they should have borne fruit enough this year to realize \$30,000.

Mr. Osborne, of Napa, had tried ashes, but could not perceive that they had any effect.

Mr. Beach, as an experiment, applied a barrel of leached ashes to a single tree, and it grew a third larger than others in consequence.

The Chairman said there was much complaint in regard to peach-trees being affected with the "curled leaf." He believed it was caused by cold winds.

Mr. Flint. It extends all over the Atlantic States and Europe, and the cause was generally considered to be unknown.

Mr. Beach had this season visited Gen. Sutter's place, and also been on Bear River. He had found that where an orchard was so situated that it did not receive the southeast winds, the trees were blighted. But there was nothing in these occurrences that need alarm any orchardist. We must expect some little drawbacks among our many advantages. On the 20th of January last the weather became quite warm; peach-trees started, and blossomed two weeks earlier than usual; this was followed by cold winds, and he had no doubt was the cause of the blight or "curled leaf."

Capt. Aram, of San José, said he had seen no blight on imported trees till this year, while California fruit had been affected every year. The varieties affected vary according to the seasons and locality. The Heath Cling failed in one locality and not in another. He agrees with other gentlemen as to the cause.

Mr. Yount, though an old resident, had not seen it till within a few years.

Judge Daniels said that Southern peaches start too early in the season, or before the atmosphere is prepared for them, when, becoming chilled by the cold winds, the sap bursts out, parasites gather, and the fruit all falls off. In May the tree will come out fresh again. We must get trees that are accustomed to shorter seasons, which do not start so soon, and will do much better. He had seen the "curl" in this State for ten years; when he first came into Santa Clara Valley from Sutter's Fort, he saw it.

The Chairman explained that when he spoke of obtaining varieties from the Southern States, he referred to apples.

Judge Daniels (in reply to the statement that winter apples became fall apples here, and would not keep) said the Chairman was probably not aware that they had a two-year-old Horticultural Society in Santa Clara County, and at the monthly exhibitions had exhibited fruit every month in the year. They had the Pearmain in winter, and the Bellflower in winter. Fruit would keep as well here as elsewhere, if properly put into barrels and taken care of. Mr. Osborne, of Napa, said some trees he imported from Boston had blighted, and he believed the cause to be frost after warm weather.

Chairman. How about alkaline soil?

Mr. Flint. Alkali is necessary.

Judge Daniels. Although alkali is an important element, you can have "too much of a good thing." A child would not live on beefsteak. We must plough deep; we should not put peaches on such soil. There is much yet to learn. He had observed that the peach does not curl, if sheltered by the oak.

Mr. Osborne, of Los Angeles, stated, in regard to alkali, that two years ago he

purchased a small farm, being unacquainted with the nature of the soil. Not thinking of alkali, he put in a lot of fruit trees and roses; after which he learned that it was a strong alkali soil, and that his trees were probably lost. As a remedy he planted tobacco among the trees, which grew well, and he only lost about one-third of his cherry-trees, no pear, apple, or quince, and the roses run riot. He had not been troubled with the curled leaf, and observed that imported varieties had no curl. His locality had a southern exposure and gentle winds, being protected at the north and west. The curl seemed to be hereditary in California trees. He uses plenty of water.

Mr. Beach said two of his trees by the side of a water ditch were not affected by blight.

[If we are not mistaken, the above facts and other remarks were regarded by those present as showing pretty conclusively that water was a preventive of blight or curled leaf, and consequently trees irrigated freely would not be affected.]

A. P. Smith, of Sacramento, was decidedly in favor of deep ploughing. In cultivating during the summer he was opposed to ploughing, as he was satisfied from experience, that only the top soil should be stirred; it was an injury to stir soil deep during dry weather. In regard to irrigation, he was satisfied of its utility, and that it was of great advantage in fruit growing, though of course fruit *could* be grown without it. But much care was requisite in regard to applying water at proper times, and there were many things to learn. When the peach has attained a small size, it remains comparatively stationary for a time, while the stone is forming, and the tree is apparently dormant. If water is applied at this time, it starts a growth of wood, and the peaches all drop off. But after the formation of the stone, when the peaches again commence to grow, the trees may be irrigated with advantage.

A design is on foot to start a monthly publication, devoted to horticulture, mechanics, &c., and if thirty men would advance \$100 each for advertising, a fund would be raised sufficient to establish it on a permanent basis.

Several gentlemen signified their willingness to subscribe, but some objected to do so unless the publication was in their own locality, and considerable discussion was had on the subject, a strictly horticultural production being mostly favored.

Mr. Osborne, of Los Angeles, said he had not seen anything published in relation to their great staple. There were many points on which they desired information. If one man could raise grapes earlier than his neighbors, they wished to know the plan; also why one man could produce more wine than another. In regard to the importance of the vine product, he said they had a richer placer than the mines, though the land was only assessed at 12½ cents the acre; but when properly brought into cultivation it would yield \$60,000,000 annually.

Mr. Osborne was in favor of a Committee. The many cases he had seen of the same variety of fruit under different names proved the need of such a committee. In the Exhibition he found his old acquaintance, the Roxbury Russet, called by several names, and Duchesse d'Angouleme was called Dutch Pear.

Judge Daniels thought the number of the Committee should be one in every county, when a suitable person was found. A few of the Committee might be appointed now, and the balance at a subsequent time.

A motion to appoint a Committee on Nomenclature was then adopted, and the following gentlemen appointed on the Committee:—

Judge Daniels, of San José, *Chairman*; A. P. Smith, of Sacramento; Geo. H. Beach, of Marysville; Wm. H. Osborne, of Los Angeles.

The meeting then adjourned.

LOCOMOTION OF THE HORSE.

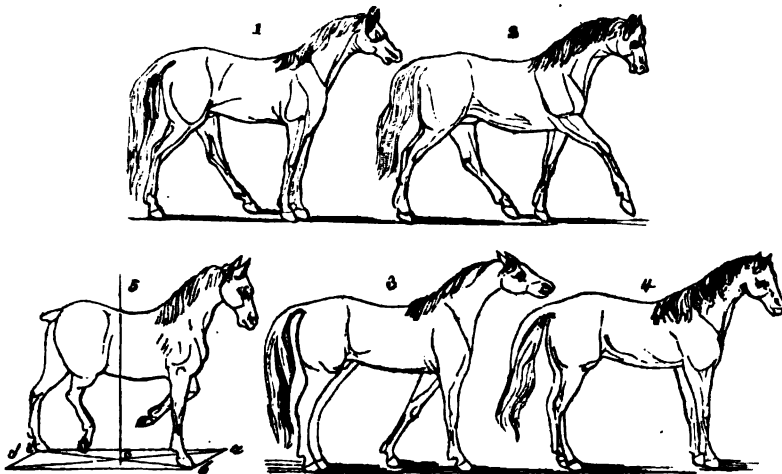
EDITOR HORTICULTURIST: The young people of our neighborhood have interested their elders in the subject of the manner in which a horse moves his legs and feet, which, it seems, we have disagreed on. Will you please to settle it?
EQUUS.

Distinguished anatomists and philosophers, no less than the unlearned, have fallen into gross mistakes upon this subject, in consequence of trusting to theoretical opinion rather than to the evidence of observed facts. There is more than one statue in the world mounted upon horses with their legs in positions that would never keep them up.

A late *English Cyclopædia* places this subject in its true light; as it possesses interest to all our readers, with the aid of four or five woodcuts we proceed to make it intelligible.

Quadrupeds move their four legs either singly or successively, or in various orders, which correspond with the different velocities of the animal. These different kinds of movement of the legs are known under the terms walking, trotting, galloping, and leaping. The horse illustrates the manner in which the locomotion of quadrupeds in general is effected. Though the subject possesses more or less interest to most persons, yet of the millions of people who are in the daily habit of seeing the horse in motion, how very few consider the means by which the movements of that valuable animal are performed, and are, consequently, in the condition of our inquiring correspondent.

Let us suppose the horse to be standing on its four legs (as in Fig. 4), and that it commences the walking step by moving its left hind leg (as in Fig. 1); this having been advanced, and placed on the ground, the right fore leg is next



Locomotion of Horses.

raised and advanced (as in Fig. 2), and having been placed on the ground, the right hind leg performs a similar movement, and the legs of the animal are in the

position Fig. 3. Lastly, the left fore leg is advanced, and placed in the position of Fig. 4. These four movements complete the step, and during the series, the centre of gravity of the animal passes over a corresponding space. This is the order in which nearly all quadrupeds move their legs in slow walking; but some authors do not coincide in this statement, amongst whom is Borelli, who has figured the horse as moving both the legs on the same side at once in walking, as some horses are taught to do in the amble, and as the giraffe is known to do naturally.

A little consideration will clear up the error into which Borelli and others have fallen, respecting the horse. It will be observed, from the foregoing statement, that the left hind leg moves first, the right fore leg second, the right hind leg third, and the left fore leg fourth. Now, if we do not analyze this order of motion from its commencement, we may be easily deceived; for, in walking by a horse, the two legs appear indeed to move together on the same side; but this arises from the continuity of the series of movements, which we find begins with the left hind leg, and terminates with the left fore leg, the movement of the right fore leg being in like manner followed by that of the right hind leg, which continuity of movement, if not carefully discriminated, gives an impression that the animal moves both legs on the same side simultaneously.

The Trot.—In trotting, the horse moves its legs in pairs, diagonally. Thus, if the legs *a d* (Fig. 5) be raised, and advanced first, the legs *b e* will be raised the instant those designated by *a d* reach the ground. On the other hand, when the legs *b e* are raised before the legs *a d* reach the ground, there is a minute interval, during which all the legs are raised above the ground at the same time. In trotting, each leg moves rather more frequently, in the same period of time, than in walking, or nearly as 6 to 5; but the velocity acquired by moving the legs in pairs instead of consecutively, depends on the circumstance that, in trotting, each leg rests on the ground a short time, and swings during a long one. In walking, the trunk oscillates laterally, whereas, in trotting, it oscillates vertically; but in each of these kinds of movement there appears to be a slight motion of the trunk of the animal both laterally and vertically.

It may be observed that the vertical line traversing the base of support, passes through the horse in such a manner as to leave by far the greater part of the weight of the body to be supported by the two fore legs.

The Gallop.—In galloping, the horse adopts three different methods of using its organs of locomotion, which are distinguished by the number and the order in which the feet reach the ground.

First Order of Motion.—If the four legs reach the ground in succession, the left hind foot reaches the ground first, the right hind foot second, the left fore foot third, the right fore foot fourth. This is the gallop of four beats, sometimes denominated the canter. This order of movement is not adapted for great speed, but is an agreeable motion in riding on horseback for ladies, or for gentlemen who ride lazily or badly.

Third Order of Motion.—In this kind of action, the horse moves the legs in the same order as in trotting; that is, the left hind and right fore feet reach the ground simultaneously, then the right hind and left fore feet. This is the order in which the feet move in racing, and whenever the greatest speed is required. It is called the gallop of two beats.

Leaping.—In leaping, the horse raises the fore legs from the ground, and projects the body upwards and forwards by the hind legs alone. It is well known that they leap rivulets, hedges, and ditches, with great ease, even under the burden of heavy riders; but, to accomplish this, an enormous expenditure of muscular

action must be required, since the muscles which produce the effect act at a great mechanical disadvantage.

Horses which are constituted for great speed, have the shoulder-joints directed at a considerable angle with the arm. Saintbell has given the relative proportions of the several parts of the skeleton of the celebrated race-horse, "Eclipse," together with the angles of inclination and range of motion belonging to the joints and legs. According to his account, that horse, when galloping at liberty, and at its greatest speed, passed over twenty-five feet at each step; these strides were taken two and a half times in a second, being at the rate of about four miles in six minutes and two seconds, or forty miles in an hour and twenty seconds.

The subject has puzzled very wise heads, and will interest all those who love a fine horse.

WINTER MANAGEMENT OF VIOLETS AND LILY OF THE VALLEY.

THE first thing to be secured is an immunity from frosts. It does not signify their being subjected to a low temperature at night—such is, indeed, desirable—but they will not endure frost as to the blossoming principle. I am here speaking of the Neapolitan Violet, for no other will force so successfully, as far as I am aware, in frames or pits. Let me then suggest a standard of temperature; I will merely point to that proper to obtain if possible. From the early part of November to the end of February, I should desire from 40° to 55° by day, and 34° to 40° by night. But we all know that such precise conditions are not easily attainable; all I can say, then, is, approach this standard as nearly as possible, only do not let them freeze. But there is another feature attending the culture of winter violets which is of equal importance to any other condition; it is this—the avoidance of damp. To this they are very liable, especially after being shut up for days, as in the case of snowy periods and those of intense frost. And I may here remark, that the more gross the plants are, the more liable are they to a kind of putrefaction in the foliage. This is to be particularly guarded against, for it spreads like wildfire, and, if not checked, will speedily undermine the utility of the plants. Dryness of the internal air of the frame or pit is, therefore, one of the leading features in violet culture, and must be promoted by all means in our power. This caution at once points to the reason why but one watering had been given the pit. Therefore, to plant them in a tolerably dry or mellow medium, and to sustain them afterwards with as moderate an amount of water, is one of the grand points to aim at. And let no man be alarmed at their looking dry or husky on the surface; this is just as it should be, for the violets are not merely blossoming through the soil they are in, but through a disposition which has been engendered in them during the out-door summer culture.

Let me direct attention to their ventilation; nothing requires more of this than the violet. On all occasions, let even the very lights or sashes be pulled off in the daytime, provided they neither freeze nor receive any rain, or otherwise that there be no cutting winds.

LILY OF THE VALLEY.—This, although a common border plant, is a great favorite with the ladies in early spring, but it is by no means an easy affair to force it early. Strong crowns are indispensable, and these must be sought for by high culture during two seasons previous to the forcing period. The roots may be taken up in the end of October and sorted, selecting the thick buds with their roots as entire as possible, and reserving the smaller for succession buds if neces-

sary. The strong roots may then be placed in pots as thickly as possible, and afterwards plunged overhead in cinder ashes, and removed to heat as requisite. A moderate heat suffices for them; from 60° to 70° maximum of bottom warmth, and an air heat of 50° to 55° will be better than more, as they are apt to draw or grow up weakly. They should be plunged overhead in old tan, or any other light material, until the stems are fairly through the soil, and then the surface covering removed in order to stiffen the shoots. One caution here is necessary—they must not be exposed to light suddenly. When first removed from the covering their stems will be whitish, and it requires a week to inure them to the light, and this must be done gradually, or the shoots will suffer. Afterwards they may be placed in any situation indoors, even under the greenhouse stage. By these remarks, it will be seen that a bottom heat is essential, and that beyond that they demand little, except an immunity from the frost. The soil at all times must be kept moist; they abhor drought.—IOTA.

TRANSPLANTING WILD EVERGREENS.

BY W. B. LIPSEY, CARDINGTON, OHIO.

THINKING that a few remarks might be acceptable to some readers, on planting evergreen trees obtained from the forest, I venture to give some of my experience. During the last few years I have devoted much time to the subject; have collected hundreds of thousands, and transplanted a considerable portion of them. I find that, to be successful, the plants should be procured in soil where they can be taken up without loss of roots, and from open grounds, or where the large forest trees do not shade them much; and, above all, never allow the roots to be exposed to the sun or drying wind. Plant carefully in good, well-prepared soil; a partial shade is very beneficial, and for a quantity of small plants the shading process is simple. Plant thickly in beds running east and west, some four or five feet wide; edge up broad boards on the south side of the bed, and forks on the north, with pales reaching from one fork to another; cut green brush from forest trees, which will be nearly or quite in full leaf, lay it across from the boards to the pales pretty thick, just above the tops of the plants. No further care is necessary that summer, except to pull out what few weeds may make their appearance. Shading pays well in saving plants; for example: last spring I put out in one bed, some eight rods long and five feet wide, about 40,000 plants, principally American Arbor Vitæ, and shaded as above, and I can safely say there was not to exceed 200 dead plants in the bed.

Some kinds of large trees may be moved successfully, as the Firs, Arbor Vitæ, Larch, &c., by retaining a portion of earth with the roots, and careful management; otherwise it is useless to spend time and expense with them. There is much imposition practised in some sections by *tree peddlers*, who collect wild pines and other trees from the rocky hills or sand deposits, consequently without rootlets, expose them to sun and wind, sell to persons who do not understand the habits of them, and, of course, nearly all die.

The White Pine is by some considered very difficult to make grow; my experience is, that when carefully and well managed, it is pretty sure to succeed, although not so well as the Arbor Vitæ, which is the most sure of all evergreens.

The Balsam and Spruce will not bear much exposure, although, when properly cared for, will generally do well; they should be the first planted, when a quantity is received. The proper time for planting evergreen trees is just as they commence to grow.

A TRIP TO CUBA AND THE SOUTHERN STATES. NO. 9.

MR. HENRY LAWRENCE, a cotton merchant, is the horticulturist of New Orleans. Mr. L. originated the Crescent Seedling Strawberry, which has not succeeded at the North, but, he assures us, retains all the characteristics claimed for it in this climate. The fruit was just coming to maturity, and was bringing monstrous prices in the stores on Canal Street. Mr. L. kindly drove us to his fine garden residence, now almost, if not quite, within the built part of the city. The Crescent Seedling bush is apparently a smallish one, with only a few leaves above ground; yet the berries were very numerous and showy, but not, to a Northern eye, very large.

At Mr. Lawrence's we again felt for Northern cultivators who were now (March 31) employed in shovelling snow, while Mr. L.'s garden was most superbly ornamented with orange, lemon, and lime-trees, in full bearing. His foreign grapes (in the open air) are moderately successful, though, we presume, the atmosphere is too damp, as a general thing. He has success with the banana when planted on the southern side of a house. His bees and poultry are remarkably fine, and we could not but envy some of his successes.

As a general thing, gardening about New Orleans is not much studied. Efforts are being made to get up a horticultural society, and Mr. Lawrence has moved in the matter, and interested some of the influential and wealthy citizens; but the town is so much occupied, in winter, by transient residents seeking a fortune, and, when that is acquired, leaving for their native places, that it requires great exertion to do a good thing for general benefit. The place, too, is so constantly and easily supplied from two regions by steam—the tropics and the cereal or apple country above—that there seems less inducement to cultivate on the spot what nature appears to have designed to bring to their doors at so little cost. Nevertheless, a society will be very useful, and we were very glad to hear Dr. Mercer (the Girard of New Orleans) express his willingness to assist, and his interest in the matter. Mr. Lawrence, we were glad to see, had supplied Dr. M.'s table with an early basket of Crescent Seedlings.

We could hear of but few good public gardens, and after a saunter among the beauties of the suburban villas of Lafayette, where more variety of planting might be studied with advantage, we finished our view of New Orleans by a visit to its cemeteries. They present the novelty to Americans of entering in tombs and ovens above ground; but, altogether, there was more neatness, and less to object to, than we had been led to expect. Expensive monuments are general in the best grounds; we could but copy from one the following most touching inscription:—

“There is not an hour

Of day, or dreaming night, but I am with thee;
There's not a breeze but whispers of thy name,
And not a flower that sleeps beneath the moon
But in its hues and fragrance tells a tale of thee,

Poor Caroline!

Only 23.

Dearly loved, and deeply mourned, by one faithful heart.”

There is but one inscription, which we now call to mind, that has impressed us so forcibly in reading on the spot; it is that of Gray, the poet, to his parent, in the churchyard of his own elegy, at Stoke Park, the residence of the Penn family:—

"The mother of many children,
One only of whom had the misfortune to survive her."

Not meeting the friend to whom our visit was principally intended, we left the elegant hospitality of New Orleans, and joined him, by telegraphic invitation, at Natchez (Mississippi), ascending the river in the fine steamer *Princess*, built to accommodate the better class of passengers from Memphis and Natchez. Every comfort that seems practicable, is combined in this boat; the sleeping arrangements are eminently comfortable; the table all that could be desired, each day furnishing the luxuries which we had brought in the *Empire City* from Havana, of bananas, oranges, and even pine-apples. So far has the luxury of these river boats been carried, that a *St. Louis* packet, the *New World*, now sails equipped with the force and material of a *daily paper on board*, and with a job office attached for printing the bills of fare, and other work. This was to be one of the novelties of the *Leviathan*, but Brother Jonathan is in advance of the English in these matters.

The upper deck cabin of the *Princess* is two hundred and eighty feet long; when well lighted up with Cornelius' Philadelphia lamps, it is one of the most striking scenes imaginable. We ascended rapidly *through* the sugar region, and entered upon that of cotton before reaching Natchez. This sugar country presents many attractions; more cultivation and thicker settlements than we anticipated. We could distinguish as a frequent tree, the Pecan, which is somewhat like a hickory, and produces most abundantly; the inhabitants here away, however, pay little attention to supplying anything but sugar. The best pecans come now from Texas.

The progress of the boat was stopped occasionally, to run its bow into a bank, and land a few passengers or cotton baling; the cotton, and the food for the negroes, is a descending cargo on this river. Occasionally, very large and showy houses and out-buildings came into view in this level country, marking the residences of successful sugar growers, and sometimes a good, shady garden, with its golden orange-trees, marked the scene. On the spots most adapted to sugar, there appeared to be an amount of very comfortable housekeeping, but we never *shall* get accustomed to a river that is always pouring itself out, and *running one way!* This is, no doubt, *prejudice*.

The great rivers emptying into the Mississippi, it might be naturally expected, would present some kind of improvement at the junctions; but rarely do we find this to be the case. At Red River, we stopped to dismiss two passengers, and moored alongside a "shore boat," the only habitation visible. These boats are mere waiting places, and are about as comfortless as possible.

Natchez reached, our first visit was paid to the great plantation of Dr. Mercer, Laurel Hill. The road, of some ten miles, passes many fine plantations and excellent houses; among others, that of Mr. Sargent, one of the Boston family of that name, who was Commissioner to receive Louisiana into the Union on its purchase. Here began to be visible the miles upon miles of hedges of the Cherokee Rose, which, we must say, is one of the most beautiful objects of the kind ever presented to the eye. It was in full bloom—the leaves of dazzling brilliancy, and the coming buds most vigorous and graceful. These hedges occupy the great breadth of ten feet, and fall about in regular festoons of exquisite beauty, which no description can bring vividly to the reader. What a pity this rose is not hardy north of the Carolinas!

But if the hedges were so magnificent, what was the Northern lover of trees to say to the evergreen magnolias, *M. grandiflora*, which soon became as common as our oaks in the forests? *Thousands* lined the road in every coppice with their

glorious dark foliage, and of dimensions like our tulip-trees. This experience of hedges and magnolias alone compensated for all our fatigues. Sometimes the Cherokee Rose festooned the magnolia, a sight we hope never to forget. On entering Dr. Mercer's park and woods of four thousand five hundred acres, these trees became giants; intermixed with oaks, the contrast was lovely beyond our powers of description. Dr. M.'s house is occupied by an adopted son, Mr. Shields, whose hospitality deserves more than a note; it is built to suit a Southern climate, and might be likened somewhat to a first class East India bungalow, enriched with every elegance. Built round a hollow square, and of one story, it presents an appearance of comfort such as one would select to repose in for a few centuries, if the lease of life were to be so extended. Its verandas and projecting shades exhibit on every side the finest old trees of evergreen magnolias, casting their dark green shadows on the lawns; these, and the fine oaks, record their planting by nature's hand long anterior to the occupation of the white man; they would be the pride of the oldest family in Christendom. Their enormous stems were covered with running vines, while the limbs of one magnolia we paced, extended in a circle of three hundred feet! As we drove through the park, an occasional *whirr* marked the rising of a wild turkey; so completely is the scene one of nature's own glorious formation, that we wished *all* our readers could enjoy it with us. The *Bignonia capriolata* here grows wild, and festoons itself from the highest limbs.

In the garden (ably controlled by the ladies of the mansion), the *Camellia* lives in the open air, and attains a height of fifteen feet. Pomegranates require no housing, but issue a succession of scarlet flowers and excellent fruit. But what shall we say of the roses? A white Lady Banks Rose we took the pains to measure; the stem, at three inches from the ground, is twenty-one inches in circumference, and it covers a circuit of ninety feet, running, and hanging *full* of bloom from every tree within its reach, to the height of thirty or more feet! Hedges of *Pyrus japonica*, *Magnolia purpurea* (eighteen feet high), Wax-trees (*Ligustrum lucidum*), Grape Myrtles (*Lagerstræmia*), twenty-five feet in height, Coral plants, Pittisporums, and similar greenhouse pets with us, run riot in this delicious climate. The finest red roses mounted the pine-trees to the upper branches, forty feet from the ground. Moss roses, the *Olea fragrans*, white Tea roses (whose bloom measured eleven inches in circumference), peaches, pears, and so forth, were as numerous and superb as heart could wish. Grapes do not succeed very well.

Dr. Mercer possesses eight thousand acres here, less than one-half being a cotton plantation, occupying four hundred and seventy hands. When we say that we dined on asparagus and strawberries at this early date (April 3), we must leave the reader to imagine the rest.

NOTES UPON THE FRUITS OF 1857.

BY W. C. STRONG, BRIGHTON, MASS.

MR. EDITOR: It may be interesting to fruit growers, in other States, to learn our experience in Massachusetts during the past season. I send a few notes, and will commence with the early small fruits. An unusually fine display of new English varieties of strawberries during 1856, led us to hope for the same result this year; but the severe cold of the past winter disappointed us. Few varieties were on exhibition, and these not to be compared with the previous season. That any English variety is desirable for our climate, is a question yet to be proved. I think it is conceded that the Jenny Lind is a decided acquisition, and entirely

supersedes the Early Virginia as a hybridizer with Hovey's Seedling. The currant is deserving of more attention than has been hitherto paid to it. Several new varieties have made their appearance, but have not been sufficiently tested to be spoken of with confidence. We regard the cherry currant as too acid for any purpose [perhaps it might supersede cranberries, or be useful for preserves—Ed.], and of no value for wine. The wine of the White Dutch had a decided preference over the Red, among the Fruit Committee of the Massachusetts Society.

A full opportunity has now been given to test the Lawton Blackberry with our own Dorchester, and we give unusual honor to home productions. The Dorchester is regarded entirely superior in quality, and as a show and market fruit. It was on exhibition from August 8 to September 21, and has taken all the premiums.

Among raspberries, Fastolf has taken the first premium. Brincklé's Orange is not yet fully cultivated for competition, but it is considered a great favorite. The Catawissa has indicated remarkable productiveness, this fall, and its fruit seems to be of good quality. We hope the second year's trial will give us larger fruit.

Of gooseberries we make but little account, with the exception of Houghton's, as a market fruit. The Mountain Seedling has been exhibited for the two past seasons, and seems to be very productive, and free from mildew. It is of medium size, with thick skin, but of fair quality.

Stanwick Nectarines were again tested, and pronounced far before any other variety, in point of flavor.

Many varieties of hardy grapes have been exhibited, some of which were of marked excellence. The Diana has for years been a favorite as a table grape; but it is remarkable, that the quantity exhibited has always been limited, and, in general, not well grown. This variety undoubtedly requires high culture, and great care in guarding against mildew. It will probably never become a popular or market fruit. A bunch of Union Village was exhibited October 17, which was of great size and beauty, but was not tested. The Carter Grape, which is undoubtedly a seedling from the Isabella, and is probably ten days earlier, was judged decidedly more sweet, sprightly, and agreeable, than its parent. Concord's, under the culture of Mr. Bull, have preserved their usual fine appearance; but, with respect to quality, the Rebecca and Delaware stand, thus far, unapproachably at the head of the list. They were tested by the side of Sweet Waters, Black Hamburgs, and even the White Frontignans, grown upon the walls in Boston, and were admitted to take rank with them. The Delaware was deliciously melting, and reminds us of the flavor of Macready's Early White. Rebecca is larger, and with a fine, vinous aroma, for which I should give it the preference. Both withstood the severe cold of our past winter. Some inquiry having been made respecting the "Massachusetts White," I will say that it has not been exhibited among us, and we are totally ignorant of its merits.

In regard to pears, mention should be made of Mr. Dana's seedlings. No. 16, a small but delicious variety, ripening a little after the Seckel; and also of No. 19, which is probably a seedling from Beurré Diel, and is of good quality, though rather coarse. But in this field of pears, I will not grow prolix over the thousand and one varieties which afflict the ears, purses, and, shall I say, mouths of the community. With the present extended list, to discard and also to adapt varieties to varying soils, is performing quite as important a task as that of hybridizing and introducing new sorts. The man who, out of a thousand seedlings, shall bring forth one which may be marked "superior," is entitled to everlasting gratitude, only on condition that he commit to the flames the worthless nine hundred and ninety-nine.

THE ESPERIONE GRAPE.

MR. AITON, writing in the Horticultural Society's *Transactions*, iii. 93, where a colored drawing is given of this grape, says: "I first noticed the *Esperione* Grape about the year 1804, in the catalogue of Mr. R. Williams, the respected nurseryman at Turnham Green. Struck with the novelty of the name, I procured from him three healthy vines, which were planted the same year in His Majesty's gardens at Windsor in a south aspect, and 800 square feet of wall were allowed for their culture. This space was completely covered in the fourth year, and since that time the plants have always produced and matured large crops of fruit. Unfavorable as was the last season, they ripened about 1200 bunches of well-colored grapes. The *Esperione* is prolific to an extraordinary degree, very hardy, and of most luxuriant growth, perfecting its fruit equally well and early with the *Sweetwater* and *Muscadine*, and in unfavorable seasons has a decided advantage over these varieties, and, indeed, over any other hardy grape that I am acquainted with. The wood of this vine is strong and high-colored; the buds are large, round, and woolly. The fruit is produced on large bunches, handsomely shouldered, differing little in size from the *Hamburgh*. The berries vary much in size, being sometimes round, frequently flat-rotund, and indented on the head with the remains of the style. A groove or channel is often observed on one or both sides, decreasing from the head downwards. The skin, which is covered with a thick blue farina, is of a deep purple color, inclining to black. The flesh adheres to the skin, and though neither high-flavored nor melting, is pleasant. The leaves are variously cut, and die upon the tree of an orange hue."

Lindley, in his *Guide to the Orchard*, copies the above, but gives no additional information. In the *Catalogue of the Horticultural Society* it has the synonyms "Hardy Blue Windsor, Turner's Black, Cumberland Lodge, and Red Port (of some)." With regard to the name, we believe it to have reference to its being raised from seed in the west, *esperios*, in Greek, being *westerly*.

NEW PEARS.

BY L. B., NEW JERSEY.

I SEND you the outlines of some fine fruit forwarded to me by Hon. J. S. Cabot, of Salem, Mass. Owing to European uncertain seasons, a great many fine varieties, once or twice tested (years ago), have since failed to produce fruit. In this climate, however, we are more fortunate, and as soon as the tree is disposed to bear, we may expect some fine fruit, if that fruit be suited to this climate.

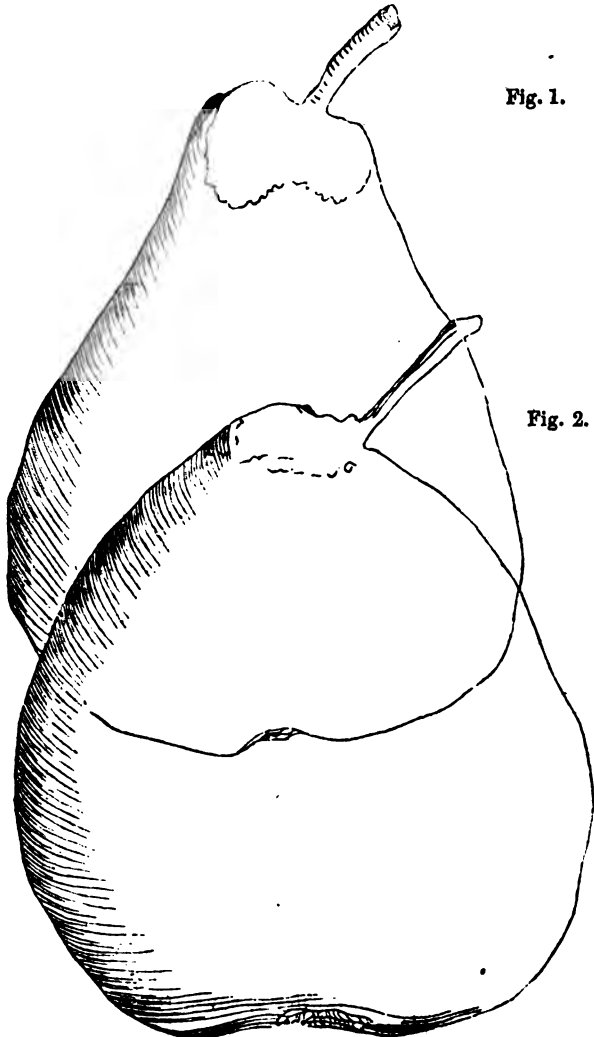
Mr. Cabot fruited not only some very little known European pears, but, also, he was fortunate enough to get from his numerous and fine seedlings four different pears, all of the *best* quality. These are not very large, two being of middle size, the other two below medium, and that is the only objection, in my opinion, to the admission of such fine fruit in our catalogues. *Apropos* of that, permit me to remark, Mr. Editor, that it is more than time that something be done towards the sifting of all these names and synonymes. It is nearly impossible for the most extensive nursery to cultivate even a small proportion of all the varieties contained in the catalogues, and they are only one-half of all the known varieties. Still, amateurs will stick to some fruits with peculiar flavors, or for some other reasons; and nurserymen must cultivate them often without any possible profit. Every-

body, of course, is at liberty to show his preferences in the choice of fruit-trees; but I believe, after a few years more of experience, amateurs will have to be satisfied by purchasing *such* varieties from the nurseries *specimen-trees*—that is, purchasing the scions for grafting, no trees of the sort being cultivated for sale. We have over a score of the finest and largest pears, extending almost over all seasons. Those should be selected for general cultivation, and the smaller or less productive varieties left for the amateurs and such as have room and time to spare.

To return to Mr. Cabot's pears, I will only state that his seedlings proved uncommonly fine, some possessing a peculiar spicy taste, with abundance of juice and sugar. As many of them are not named, and perhaps will never be, I will only mention the two large pears which were sent to me.

The one is *Auguste de Maraise*—a large, fine, pyriform fruit, with a rather rough-looking skin, dotted and patched with deep brown. Stem, rather short, or medium. Calyx, close, sunk in a shallow basin. Flesh, buttery, flavored, juicy, sweet, *delicious*, partaking a little of the *Duchesse*, but more delicate, and of a different flavor. Ripened October 20.

The other is the *Beurré de Konink*. Both are seedlings of Van Mons, but little known in Belgium. This fruit is rather larger or more full than the preceding one. It has the same appearance, as far as the color and the patches of the skin are concerned, as the *Auguste de Maraise*, but its stem is rather longer, more slender, and surrounded at the cavity with fleshy protuberances. Flesh, rather coarse, but juicy, highly flavored, and *truly delicious*. Both these varieties are among the best I have tasted this

Fig. 1. *Auguste de Maraise*.Fig. 2. *Beurré de Konink*.

season, and they seem to be of such a texture as not to be subject to *sporting* or changing their quality in ordinary seasons.

I believe these sorts so long overlooked in their native country, where perhaps few specimens ripened in proper condition for a number of years, are well worth a trial. If their bearing qualities come up to those of the Duchess and the Louise Bonne, they may certainly be considered as acquisitions, being at least equal, if not superior, to some of our large standard varieties.

ON THE NORTHERN LIMITS OF VINE CULTIVATION.

(TRANSLATED FROM A. DE CANDOLLE'S GEOGRAPHIE BOTANIQUE.)

With Remarks by R. Buchanan, Cincinnati, Ohio.

IN Europe the limits of vine cultivation on an extensive scale, and for the purpose of wine-making, have retrograded from the northwest towards the southeast during the last few centuries; but before dwelling upon the abandoned limits, we shall trace the existing ones.

Portugal is famous for its vines; but in Spain their cultivation is not universal, being wanting, wholly or in part, in the moist northwestern provinces of Galicia and the Asturias; they are not even habitually cultivated in the comparatively drier mountains of the Asturias, though some intelligent agriculturists have a few acres of vineyards. In the southwest of France, the vineyards are beautiful.

According to the government statistical tables of France, published in 1837, the extent of the vineyards, in 1834, was in the departments—

	Acres.
Loire Inférieure	8120
Morbihan	217
Ille-et-Vilaine	56

The more exact limits are—Southern Brittany, lat. $47^{\circ} 30'$, from whence the line is directed eastward to the department of Mayenne, where in 1834 only 304 acres were under vineyards; to the department of L'Eure, 412 acres; of Oise, 834 acres; and of La Somme, $5\frac{1}{2}$ acres. A little wine has been made to the west of this line, as at Caen, Calvados, and even in Jersey, but these are exceptional cases, which do not affect the general accuracy of the result above given. Those departments of France which did not return above $2\frac{1}{2}$ acres of vineyards in 1834 are, in the west, Finisterre, Côtes du Nord, Manche, Orne, Calvados, Seine Inférieure, Pas de Calais et Nord; in the centre, those of La Creuse and of Cantal, where the elevation of the land makes the climate too rigorous.

In Belgium, the cultivation of the vine on a grand scale ceases at Argenteau on the Meuse (lat. $50^{\circ} 45'$). Descending the Rhine, beautiful vineyards advance as far down as the hills extend, and below Bonn, as these conditions disappear, the vine becomes rare, stopping altogether at Dusseldorf. In Northwestern Germany, Potsdam and Berlin are the extreme limits. In Saxony, vineyards are more frequent up to lat. $51\frac{1}{4}^{\circ}$ —as at Weissenfeld, in Prussian Saxony, and at Meissen, north of Dresden.

This line, extending from the mouths of the Loire to Potsdam (lat. $49\frac{1}{2}^{\circ}$ to $52\frac{1}{2}^{\circ}$), is throughout its whole extent to the south of that to which the vineyards once attained. Not only are vines now grown here and there to the northward of it, but there are proofs that formerly, towards the close of the middle ages, and for two or three previous centuries, vineyards were numerous to the northwest of these limits.

In Normandy, it is matter of tradition that numerous vines were destroyed in the 14th century by the English, who, from holding Guienne, were anxious to favor the vine growth of that country. From the 12th to the 13th centuries, a number of maps allude to the vines of Normandy, Brittany, and Picardy.

Tacitus (*Agricola*, xii.), speaking of England, says that the soil is fruitful in corn, but not in the olive, vine, and other plants of warm climates; these ripen slowly and quickly sprout, and for the same reason, namely, the humidity of the earth and sky. It is mentioned in many works that the Emperor Probus granted permission to the Britons, as well as to the Gauls, to cultivate the vine; but this proves nothing, for we do not know whether they availed themselves of the permission, and, if so, whether they profited by it. In more recent times, it is known that the vine was cultivated in England. In Strutt's *Ancient England*, chronicles and facts are quoted in proof of this. The county of Gloucester was famous for its vineyards; according to Bede, Guillaume de Malmesbury, the grapes there were sweeter than any others in England. According to Stow's *Chronicle*, wine was made in Windsor Park as well as in all other parts of England. In an ancient manuscript of that date, kept at the castle, may be seen the annual cost of the vine plantation, the account (in the time of Richard the Second) of the vines which were grown in great quantities in the Little Park, as well as of the wine made. A portion of this wine was consumed in the palace, and the rest sold for the king's profit, whilst the duties were paid to the Abbot of Waltham, the incumbent of Old and New Windsor. Strutt gives a figure of an ancient Saxon wine-press. Miller, in the *Gardeners' Dictionary*, says, in 1768, that though few vines are now grown in England, they were in former times very common. This is proved by the fact that numerous places, in many parts of England, derive their names from this circumstance, and that there are acts to certify the extent of ground allotted for vines to abbeys and monasteries. Miller further mentions the attempts made in the neighborhood of London, and it is well known that even now grapes are grown for curiosity or for pleasure in the South of England. These grapes are not always bad, the wine that has been made is not always detestable; though the Chancellor of the Exchequer has no fear for the result affecting the duty on foreign wines entering England, which yields an enormous revenue.

Analogous facts regarding the retrogression of limits of vine cultivation are presented in the northwest of Germany. Meyen states that in the fourteenth century the vine was introduced into Prussia, and that it was cultivated there long since that epoch. M. J. G. Bujach has published in a Königsberg journal an article on the ancient vine culture in Prussia, when that country was under the Teutons. The wine made was acid, and now-a-days would be undrinkable, compared with more southern wines. The climate of the shores of the Baltic, between Dantzic and Königsberg, is not very unfavorable to the vine, and we find that even now it is sometimes cultivated there. Lastly M. Streicher assures me that grapes are not grown now near Cracow, though there are localities named after the vineyards which once grew there.

To return to the present limits of the vine, there are extensive vineyards in Bohemia (notwithstanding the elevation of that country), in Moravia, and more still in Hungary. The chain of mountains called successively Riesengebirge and Carpathians define its limits in that part of Europe, and it does not extend beyond them, except eastwards under the 48th degree. Thence it passes to the province of Bukovina, where there are vineyards in favorable localities, but there are none in Galicia. At Kiew grapes ripen badly and in gardens only, no wine being made. Descending the Dniester, the first vines are met with at Mohilow under the 48th degree, on the Dneiper under the 49th degree, on the Bug under the

47th degree. On the banks of the Don the culture of the vine is extensive from Axais to Tcherkask. On the Volga it is cultivated at Sarepta, lat. $48\frac{1}{2}^{\circ}$, and probably as far north as $50\frac{1}{2}^{\circ}$.

In Southern Russia it is customary to bury the vines during winter to protect them against the great cold, and the frosts of September sometimes destroy the crop.

In Central Asia vines are grown here and there in low populous valleys. Humboldt mentions their being found in Hamil (lat. 43°), and at Lhasa in $29^{\circ} 41'$. The height and extent of the mountain chains in the centre of that continent are an evident obstacle to this culture. Bunge informs me that vines are grown in North China, in the environs of Pekin, and in great abundance, even as far north as Gouan-gou, beyond which he saw no vineyards; but the plants were everywhere covered with manure during the winter, the cold often descending to 5° Fahr.

In North America, at least in the United States, the *Vitis vinifera* has wholly failed. It was first attempted by Swiss on the banks of the Ohio, lat. 39° , but the wine was sour, did not keep, and did not pay its expenses, and the vineyards have since given place to corn-fields. Fine but limited crops of grapes are said to have been obtained near Cincinnati, but other attempts have failed; of these the most remarkable is that of Lakanal, who resorted to various expedients in several of the States, changing the localities, plants, &c. Again, Mr. Longworth, of Ohio, pursued his attempts for thirty years with remarkable zeal but no success, and it has been found necessary to use the Catawba Grape, an original wild grape of America, of which 1500 acres are cultivated in Ohio, 300 to 400 in Cincinnati, and about 1000 in Missouri, Indiana, and Ohio. These vineyards are increasing and profitable.

In New Mexico and California the climate is more favorable, and the European vine is cultivated, but it has not been introduced into the more recent settlements, and it is impossible to say what its future limits may be in Oregon.

In the southern hemisphere the vine thrives in Chili, and excellent wine is made to the east of the chain of the Andes at Mendoza, Saint Juan, and La Rioja, but its southern limit is not known. Schouw mentions the vine at Concepcion under the 37^{th} degree.

Wine of the best quality is sometimes produced at the Cape of Good Hope; that of New South Wales resembles the wines of the banks of the Loire; and in general the dry climates and light soils of Australia are well adapted to vine cultivation. That of Tasmania is too humid.

[In the above *résumé* the extensive vine cultivation of the Northwestern Himalayas, Affghanistan, and Persia is not mentioned. The reported cultivation at Lhasa is open to doubt; Huc and Gabet, the only Europeans who have visited Lhasa, make no allusion to it; and the testimony of recent Himalayan travellers who have questioned the Thibetans upon the subject seems to prove that the climate is much too rigorous and arid.]

[*Notes.*—The foregoing excellent article, from the pen of one of the best botanists in Europe, contains much to interest us here in America. That the geographical limits for the cultivation of the "*Vitis vinifera*" in Europe have been gradually receding from the northwest to the southeast appears to be clearly proven; and that the attempts with the same vine, in all its varieties, in the United States, have thus far been a failure, cannot be denied. With the exception of some parts of California, where it is *said* to succeed, the *Vitis vinifera* is abandoned for vineyard culture in the United States. About sixty years ago experiments in vineyard culture, with foreign vines, were made in the vicinity of New York,

Philadelphia, Lexington, Ky., and some parts of Virginia; with some promise of success at first; they all eventually failed. Some years later, the good sense of a few persevering cultivators induced them to try our *native vines*, with a better reward for their efforts. *Wine was made*, but not of a quality to please the American palate, and it was for a time abandoned. This may be said especially of the Swiss settlement at Vevay, Ind., established in 1805, where the Schuylkill Grape was principally cultivated, under the name of "Cape" (a misnomer). The vineyards planted on rich bottom lands, instead of the hilltops and sides, did not succeed, and were given up for corn-fields. At length a native grape was found, of great promise—the *Catawba*, from North Carolina. It was first introduced into notice by Major Adlum, of Georgetown, D. C., in 1820, and by N. Longworth, of Cincinnati, in 1823. The latter gentleman, by his untiring efforts in the cause, is justly entitled to be called the "father of successful vine culture in the West." This noble grape is now our principal reliance for wine in the West and Southwest, and is rapidly spreading over the Southern States also. The quality of the wine made from it is too well known to require further remarks, except to say that it is very popular, and readily commands a remunerative price to the producer. That wine-growing in the United States will eventually succeed, as a permanent and paying crop, no one familiar with its present progress can doubt. What are the geographical limits, and where the most favored region within our vast territories, has yet to be tested by experience. We are comparatively but new beginners in this enterprise, and mere learners; but if we do not improve as we progress, it will not be in accordance with the usual sagacity and energy of the American character.

In the varied climate of our widely extended country, some native grapes will be found suited for wine in almost every latitude south of 48°. Thus far, the Isabella for the North, the Catawba for the West, and the Scuppernong for the South, appear to be the favorites. Many other native and hybrid varieties are now being tested, and amongst them superior wine grapes to those now cultivated will doubtless be discovered. We live in an age of progress, and why should wine-growing form an exception?

The grape is now cultivated for wine-making in 20 of the 31 States of the Union, and the following estimate is probably a fair approximation to the number of acres in vineyards in some of the States. Ohio, 3000, about 2000 of which is around Cincinnati; Indiana, 1000; Kentucky, 500; Illinois, 600; Missouri, 700; Tennessee, 200; Georgia, 100; South Carolina, 200; North Carolina, 200.

The mountainous regions of Tennessee, North Carolina and Georgia are thought to be the best parts of the United States for grape culture. Thus far, the vineyards have produced better average crops in Ohio than Missouri. The past year, however, is an exception; in Ohio we shall scarcely average over 100 gallons to the acre, whilst in Missouri some of the vineyards have yielded 1000. One hundred gallons per acre will more than pay the expenses of cultivation. With all the casualties to which the crop is subject, it is found to be as reliable as the apple, our hardiest fruit; and, were it not remunerative, it would long since have been abandoned.

R. BUCHANAN.]

Cincinnati, 1857.



THE SEED, THE STOCK, AND THE GRAFT.

BY WILLIAM MUNDIE, LANDSCAPE GARDENER, HAMILTON, CANADA WEST.

THERE are very few people to whom a portion of good fruit is not both grateful and beautiful, if partaken of with propriety; and there can be but very few, who are in any way engaged in the cultivation of the soil, but will have an interested as well as a pleasurable desire to grow some one or more of the fruits which thrive in our climate.

Fruit also forms (or should form) a very considerable staple in every market; and while its cultivation gives remunerative employment to the growers, it also forms one of the best and healthful of exercises for the amateur. From thus viewing the importance of good and productive fruit-trees to the country generally, I have been led to write the few following remarks, which, if but pointing in the right direction, may be beneficial in drawing attention to the subject.

The propagation and raising of the various sorts of fruit-trees for the stocking of orchards and fruit gardens, is a business of considerable magnitude, and there are few businesses regarding which so much trust has to be exercised by the customer as with the tree grower or nurseryman. A considerable time is required to prove what he has got, and seeing that the price of the trees is not the one-hundredth part of the loss should disappointment ensue.

In the earlier settlement of this country, orchards (as many evidences yet existing testify) had been mostly raised from seeds of the various fruits intended to be grown; many varieties of fruit were thus raised. Indeed, scarcely are there to be found two trees with fruit alike in the older orchards which had been thus raised; yet mostly all were of an inferior quality. Now and then, a tolerably good fruit would be got, arising, probably, from having been cross or hybrid bred between two pure, or nearly pure, original (but different) sorts, the combination of the properties of which were fitted to form a right consistency for a good fruit; but this was chance.

A little later, grafted and budded trees had been introduced—that is, trees grafted or budded with scions or buds (from any good sort that it might be wished to increase) upon a young seedling tree or stock. This process, which is now well understood, most admirably answers the purpose of propagating and multiplying good varieties, with the certainty that they will be identically the same sorts as the parent trees from which the scions or shoots were taken. In respect to general principles of working, this process is complete; but I consider that much has to be learned and observed before we have the full benefit of its very adaptable qualities for increasing and preserving our fruits pure and productive.

In all well regulated nurseries, the different sorts of trees are marked with either names or numbers on the ground where they stand, and, generally speaking, very great care is taken to have the kinds true to the names given with them; and, except from any accidental mistake (which, under the best regulations, will sometimes occur), many, I believe, are worthy of every confidence. But then, these names and numbers only speak truth as to the sorts from which the grafts were taken.

Now, without attributing other defects than those of the present routine of practice, and, of course, a desire on the part of nurserymen and tree growers to raise as large a quantity at as cheap a rate, and in as short a time as possible, I consider that there is a very great oversight in the present mode of propagating and raising fruit-trees, and which, in my opinion, lies in the indiscriminate way

in which the stocks (or seedling trees to graft upon) are raised and used. For instance, in the case of apples, if a cider-mill is near, a quantity of seeds are very readily obtained; but such seeds are probably from fifty or one hundred varieties, most of them having pedigrees, connections, relations, differences, and affinities to others, and to and from each other, inextricable beyond all calculation. They are sown and grown, of course, indiscriminately, and the further probability is, that many of them may be already hybridized with, and allied to, the sorts which will be grafted or budded on them, and presuming that the stock exercises a most decided influence on the graft, and also on the quality of the fruit, but, more especially, on the health and productiveness or unproductiveness of the trees, and that, notwithstanding the goodness or productive quality of the sort which may have been grafted from, such indiscriminate amalgamation as this must be detrimental and deteriorating.

Some practical nurserymen say, that by the root-grafting system, the unsuitableness of stocks to grafts is done away with, from the graft itself rooting into the soil. I am of a different opinion, because I think that the rooting of the graft rather aggravates the difficulty than otherwise, as, then, there will be two distinct sources through which the tree will be supplied with sap, the amalgamation of which may be very injurious to either health, growth, productiveness, or quality. With other fruits which come under the process of budding or grafting (as with the apple), the procedure has been pretty much the same, and need not be enlarged on.

The pear, when budded on the quince stock, has shown us some lessons in the direction aimed at in the foregoing, as many sorts of the pear do not succeed on quince stocks, which, on pear stocks, are thrifty, and good bearers. This can only be attributed to the influence of a stock which is not fitted for them. In other sorts, failures occur on pear roots, but, no doubt, from a similar cause.

By great attention and care in the proper hybridizing and crossing of the different sorts, the French and German growers have succeeded in raising many new seedling varieties, possessing first-rate qualities while on their own roots pure, or when grafted upon suitable stocks, but which also get much deteriorated by being grafted on unsuitable stocks. Many good American seedlings have lately appeared, which, if thus indiscriminately matched in grafting, must share the same fate.

By gathering seeds which may have been hybridized by insects, or in any other promiscuous manner, some good pears may be raised, but only by the merest chance; and the chances against it are manifold.

By a like hypothesis, I have been led to believe that the indiscriminate manner in which seedling stocks are raised, reduces the productiveness, the size, the flavor, and also, in a very great degree, the constitutional health and vigor (or hardiness) of many of our fruit-trees, to be, in a great measure, a matter of chance, dependent as to whether any particular sorts of grafts may happen to have been put upon stocks suited to them; and I suppose there will be but very few who will think otherwise than that their chance of being so placed would be but very slender indeed.

Nurserymen and fruit growers certainly deserve well for having introduced many fine sorts of fruit into the country; whether for self-interest or philanthropy, matters not, as, in either case, the country is benefited. The progress made in propagating has also been great, but, by reason of those oversights which I have been endeavoring to point out, I think we have been (and are yet) working greatly in the dark, and making success more a matter of chance than it otherwise might be.

As a commencement to improvement, the adaptation of properly bred stocks to the various sorts which it may be wished to grow, might be the first aim; and, in

my opinion, the nearer thorough bred (borrowing a term), or bred as nearly as possible in a direct and pure line from the crab-apple, pear, or plum, &c., so much the more likely are we to have success in producing healthy, hardy trees, and clean, handsome, and high flavored fruit. This one branch of the improvement is of itself a great work, and must also be a work of time and experience; but the importance of such a work ought to be sufficient to enlist the united efforts and energies of all who are interested in fruit growing, and who is not?

I have not written the foregoing remarks as pretending to impart any definite information on the subject (in detail), as neither time nor opportunity has been had in order to experiment for that purpose, and the subject is of too much importance for random conclusions. I have only endeavored to point out a problem, the working out of which is of great interest, but which, if properly taken up by nurserymen and horticulturists, may be solved to much advantage, and which, I have every reason to believe, will account for many of the discrepancies and difficulties hitherto experienced with fruit and in fruit growing.

THE CHARDON POTATO.

BY GUSTAVE HENZE.

For some years past a new variety of the potato, extraordinarily productive, has been cultivated on many farms in the environs of Mans. It is known under the name of "the Chardon Potato," because it was obtained by M. Chardon, a farmer at Griez (Sarthe) in 1846, from a sowing made with seeds purchased at Mans, which had been ripened in Saxony.

The Chardon potato is distinguished from the varieties cultivated either in fields or gardens by the following characteristics:—

1st. Its tubers are long, and rather flat; its skin is glossy and yellow when cultivated in light and sandy soils, and rough and yellowish brown tinged with red, when grown in argillaceous earth. Its eyes are numerous and deeply sunk in cavities; its flesh is of a clear yellow.

2d. Its stems are numerous, strong, and furnished with deep green leaves; its flowers are white, washed with rose, and succeed each other without interruption, from the 15th August to the end of September.

This variety is late, and ripens its tubers towards the end of October. Up to this time (1856) the disease which has appeared every year since 1845, and committed such great ravages upon the late potatoes, has not touched it.

But the Chardon potato is not only an interesting variety on account of its having up to this time resisted the attacks of the disease: it deserves to be propagated because it is without contradiction the most productive potato of all those cultivated upon a large scale.

M. Dugrip, to whom attaches the merit of having been the first to direct the attention of agriculturists, committees, and societies, to this fine variety, has produced, on an average per hectare, twenty times the quantity of tubers planted upon the same superficies; this result is so much the more remarkable that it constitutes the mean return of the culture of 7 hectares 40 ares (about 17 acres 1 rood 9 perches).

In cultures conducted on a smaller scale the returns obtained have frequently been extraordinary. Thus M. Coudray, a farmer in Saint Maixant (Sarthe), has produced from eight hectolitres 220 hectolitres or more than 27 to 1; M. Epinette, a proprietor at Ferté, Bernard, gathered 33 hectolitres, for one; and M. Velmorin has 18 hectolitres for 20 litres, which is more than 90 times the quantity planted. In general the weight of the tubers averages between 150 and 225 grammes (from 4.8 oz.

to 7.2 oz.). This potato will propagate itself very rapidly in France, if it continues to be so productive and remains perfectly healthy; for a great number of agricultural committees and societies have experimented upon it this year (1856), and we strongly recommend the readers of the *Journal d'Agriculture Pratique* to follow this year its divers phases of existence in these attempts, and to take an account of the products they render in the autumn. We wish to believe that it will still furnish an abundant, if not an extraordinary produce, and that we shall be able anew to regard it as a true conquest, a unique variety, as well on account of the beauty of its tubers as of the large proportion of starch they contain.—*Translated from the French of the "Journal d'Agriculture Pratique."*

VISITS TO COUNTRY PLACES, NO. 13. NEW JERSEY.

Woodlawn, the residence of Richard Stockton Field, Esq., near Princeton, N. J., presents many attractions, and in none more than in the character of its planting. Mr. Field is an enthusiastic lover of trees and a garden, and, we must say, *has succeeded*. His evergreens will compare favorably with any of the same age in America, both for rapidity of growth and beauty of form. This is mainly owing to a knowledge of how trees should be planted, to preparation of the soil, and to his allowing each specimen ample room. We find cedars of Lebanon, hollies, magnolias, and rare trees, in great variety, grateful for kindness, and rewarding their owner in a manner highly encouraging to the amateur.

Mr. Field has been the proprietor of *Woodlawn* only about thirteen years. Before the elegant and tasteful mansion was even planned, he began to plant. The house was commenced in the fall of 1854, and completed in the fall of 1856, by Mr. John Notman (Architect), of Philadelphia, and much esteemed as the renovator of Princeton College, to whose judgment in planning, and exquisite taste in finish, it is a noble monument.

Thirty acres are devoted to ornamental purposes, including the gardens and forcing houses, and grounds; the remaining ninety, separated by a road, are employed for farming purposes. In the tree department, Mr. Field pays especial attention to evergreens. The front, on the main road, is planted with white pines; many of these are forty feet in height. He justly thinks this species should never be planted nearer to each other than forty feet, at which distance their branches soon meet. His largest Cedar of Lebanon is now more than thirty feet in height, and though slightly suffering in its leaves from the two late extremely cold winters, is now established, and will make Mr. Field's name remembered for a century or two. There are the following noticeable specimens of which we took memoranda:—

Fine Balsam Firs, Larches, and Hemlocks.

Norway Spruces, thirty-five to forty feet.
Cedar of Lebanon, thirty feet; slightly injured the two last winters, but recovering, and assuming its true character.
European Silver Fir, twenty feet.
Pinus Austriaca, twenty feet.
Pinus Excelsa, eight feet.
Deodar Cedar, ten feet.
Abies Smithiana, six feet.
Abies Douglasii.
" Washingtonii.

Abies Frazerii.
" Menziesii.
Pinus Pichta.
" Pinaster.
" Pumila.
" Monticola.
" Cephalonica.
Weeping Thuja; fine specimens.
Thuja Chinensis.
" Stricta.
" Plicata.

Very fine specimens of American Arbor-Vitæs, from twenty to twenty-five feet high (standards), and showing not the slightest disposition to lose their lower branches. Beautiful.

Extensive and very fine hedges of American and Chinese Arbor-Vitæs, kept well trimmed.

A large number of remarkably beautiful specimens of Siberian Arbor-Vitæs, from six to eight feet—a plant that cannot be too warmly recommended; it grows wide at the bottom, and should be used for hedges.

Two Prostrate Junipers, on the back lawn, some fifteen feet in diameter, and most remarkably beautiful; this plant is too much neglected. These two specimens form groups of themselves, and are among the greatest ornaments of Woodlawn.

Juniperus Chinensis.

" Phœnicia.

" Ericoides.

" Excelsa.

" Oblonga pendula.

" Sabina.

Taxus Variegata.

" Adpressa.

" Devastonii.

Picea Nobilis.

English Black Spruce.

American Black Spruce.

Double White Spruce.

Magnolia Acuminata, thirty feet; a very remarkably fine specimen, and very beautiful.

— Tripetela (many specimens), twenty to twenty-five feet.

— Macrophylla, fifteen feet.

— Cordata, twenty feet.

— Glauca, twenty feet; near the house, and highly ornamental.

— Auriculata and Conspicua.

Among weeping trees are the following:—

Weeping Ash.

" Sophora.

" Birch.

" Elm.

" Poplar.

" Larch; a picturesque and uncommonly fine specimen of a rare tree.

" Willow; new, and dwarfs.

Purple Elm.

" Filbert.

Purple Sycamore.

" Beech.

Large-leaved Lime.

Fern-leaved Beech.

Crested "

Cut-leaved Alder.

Buddlea Lindleyana.

Chinese Jingko Tree.

Some very fine Willow-leaved Oaks.

Juniperus Squamata, a remarkable specimen.

Many of Mr. Field's fruit-trees have been moved half a dozen times, but they always seem to have thrived under the operation.

Mr. F. is thorough in whatever he undertakes. The grapery is in the finest condition. The chicken-house produces one hundred pair of the finest breed each year. We cannot mention a single place in the Union with more commendation than Woodlawn, where hospitality reigns supreme, and the character of a good planter is most amiably combined with that of a celebrated lawyer, President of a good Bank, an active member of the New Jersey Historical Society, and a most genial host; need we add that here is found a good library, and that, in his open-hearted manner, he admits himself a pupil of Downing and the *Horticulturist*? Mr. F. is a grandson of Richard Stockton, one of the signers of the Declaration of Independence.

Our "Visit" has extended itself over so large a space, that we shall be compelled to give another page or two to Morven, the family residence of the Stocktons, and others in the vicinity of classical Princeton.

NEW PLANTS.

ACHIMENES GHIESBREGHTII.—Presented to the Horticultural Society by Mr. Andrew Henderson, of the Wellington Nursery, St. John's Wood Road, in 1849.

Stems erect, deep purple brown, with a few scattered hairs. Leaves opposite, stalked, oblong-lanceolate, rugose, convex, coarsely serrated, not unlike those of the larger stinging-nettle. Flowers solitary, axillary, with a slender hairy peduncle, twice as long as the leafstalks. Calyx smooth, equally five-parted. Corolla

deflexed, nearly cylindrical, gibbous at the base on the upper side, one inch and a half long, bright scarlet, with an oblique regular limb, and a circular throat. Disk a lobed fleshy ring. Stigma large, two-lobed, very hairy.

This is a neat, distinct, and rather slender kind, requiring the same treatment as the old *A. coccinea*, and easily increased by the small scaly rhizomes. It grows about eight or ten inches in height, and flowers from June to August. It is very handsome.—*Horticultural Society's Journal*.

GALPHIMIA GLAUCA.—Sent first from Mexico by Mr. Hartweg in 1837.

A beautiful shrub, easily kept in the form of a bush. The leaves are a deep bluish-green, ovate, obtuse, glaucous on the under side, and furnished with a pair of glands on the edge near the base. The flowers, which are golden yellow, appear in close terminal racemes, between three and four inches long in strong plants. Each has five distinct petals, with almost exactly the form of a trowel.

It is a very desirable species, as it flowers during the latter part of the autumn.—*Horticultural Society's Journal*.

LEPTODACTYLON CALIFORNICUM. Nat. Ord. *Polemoniaceæ*.—Native, as its name implies, of California. Mr. Douglas was the first to introduce it to notice. Stem dwarf, and numerously branched. Branches covered densely with small, beautiful foliage. Leaves cut nearly to the base into seven awl-shaped, hairy segments, mucronate. Calyx hairy, tubular, cylindrical, divided rather deeply into five subulate teeth. Corolla hypocrateriform; tube very slender; limb large and spreading, divided into five wedge-shaped, sometimes irregularly toothed lobes.

This is quite a gem of its kind, producing a rich profusion of brightly-tinted flowers in spring and early summer. Indeed, the number of blooms is so great as to quite eclipse the diminutive foliage, and hide it from view. Its habit is dwarf and very handsome if well grown, and its culture is moderately simple.

SABBATIA CAMPESTRIS. Nat. Ord. *Gentianeæ*.—An annual very little known as yet, from the Arkansas Territory, where it was discovered by Mr. James Drummond, inhabiting the prairies. It has also been detected in Texas and New Orleans. It grows from four to six inches and upwards in height; the corolla large and handsome, of five segments, of a deep rose color, with a pale yellow centre, measuring about two inches across; the leaves are opposite, obcordate, and sessile, about three-quarters of an inch long, of a light green color. Seeds require the temperature of a hot-bed.—*Bot. Mag.*, 5015.

SALVIA CANDELABRUM. Nat. Ord. *Labiataæ*.—A hardy suffruticose *Salvia* from Spain, where it grows at an elevation of 2500 to 3000 feet above the sea level. The flowers are of medium size, white, or pale sulphur, with the lower lip of deep rich violet, variegated and streaked with white in the throat, borne in a cyme somewhat regularly disposed, which has given rise to the specific name. The whole plant is rather hoary, very leafy, and exhales a strong aromatic scent.—*Bot. Mag.*, 5017.

AN AMATEUR'S WANTS.

An amateur who has an abundance of Fuchsias, Balsams, Geraniums, Cinerarias, Petunias, &c., and wants something better for his greenhouse, may indulge his fancy with *Camellia Japonica*, *Azalea Indica*, *Epacris*, *Acacias*, *Cestrum aurantiacum*, *Boronia*, *Ereostemon*, *Veronica*, *Andersonii*, and others, *Abutilons*, *Platycodons* (double white, double blue, and the single varieties), *Chorozemas*, *Ericas*, all showy in bloom and pretty out of bloom (except the *Platycodon*, which dies down to the root and comes up again like *Asparagus*), and the foliage of which is varied and handsome.

HYBRIDIZING THE GRAPE.

BY AUGUSTUS D. ROGERS, SALEM, MASS.



BSERVING, in some of the late numbers of your invaluable *Horticulturist*, that an interest is awakening in the important results from hybridizing grapes, and also, in an article on the "Delaware," that "the efforts of the hybridizer are yet to be heard from," allow me to send an account of the result of an experiment undertaken six and a half years ago by my brother, Mr. Edward S. Rogers, in our garden of about half an acre or more. He had before experimented on pears, in a small way, according to the directions given for the cross-breeding of plants in Downing's "Fruit-Trees of America," but was stimulated to

try this experiment from perusing two articles in the September and October numbers of the *Horticulturist* for 1847 and 1848 (by the celebrated Dr. Lindley), taken from the London *Horticulturist*.

The Isabella (seldom ripening in this northern latitude unless in very favorable situations) and the Diana being only a little earlier, it was desired to obtain grapes combining the hardy and early fruiting qualities of the native with the rich and delicate flavor of the foreign species, which could be grown here in the open air, needing neither aid of glass, sulphuring for mildew, or winter protection, and unlikely to be cut off by the early frosts of autumn. For this purpose, a four or five-years' old seedling, growing in the garden, from the New England wild species, *Vitis labrusca*, was selected as the female parent of the intended hybrids. It is known here as the "Carter," or "Mammoth Globe." Bunches, small, containing from four to eight or nine berries, some of them very large, an inch or more in diameter; in shape, much flattened. Skin, rather thick. Color, brownish-red. Ripe about the 1st of September, of agreeable flavor, and superior to most of this species. The Black Hamburgh and White Chasselas, or Sweetwater (*Vitis vinifera*), had been arranged as the other parent, in a cold grapery near by, to be simultaneously in bloom with the native. When the blossoms on the native vine *had begun* to open, a few clusters were selected, on which to operate, from among those most forward and *nearly ready to open*. All but five or six flowers were then cut away, and with a pair of scissors, the cap (corolla) of each carefully removed, and stamens all cut off, thus (before their surrounding anthers were quite ready to scatter their own pollen) preparing the pistil for artificial fertilization with the foreign varieties. This was performed by touching the stigma of each pistil thus exposed, at the moment of taking off the cap or petals, with fresh pollen from the anthers on a bunch of the foreign kind, already at hand. Each bunch thus operated on, was immediately covered by a small, fine, cotton bag, to prevent access of the pollen of the vine itself, or any floating in the air, or liable to be carried about by bees, or otherwise. In order to be *more sure* of the fertilizing action, a foreign bunch, in full bloom, well covered with pollen, was additionally placed therein, and the bag tied up. A day or two afterwards, each bag being taken off, and every stigma again carefully retouched, and a fresh foreign bunch again inclosed with every cluster, all the bags were again tied up, to remain for two or three weeks. When again reopened, grapes about the size of peas, generally, were found, on every cluster, to have set finely, in growing order, and were left to take their

natural course upon the vine, each bunch having been previously marked for identity. The bunches, when ripe, were carefully preserved till late in the fall, the seeds of every grape then taken out, and planted in the garden, within a framework under cover of leaves and boards. They came up regularly, as planted, the next spring, nearly every seed vegetating; but only about one-third (forty-five) of the infant plants could be saved, by daily care, from the ravages of the cut-worm. They were then left to grow, uprightly trained on poles for three or four years; then half the number or more thinned out, and transplanted, being consequently retarded somewhat in their growth and vigor.

In order to ascertain as soon as possible the result upon the fruit, the vines (not knowing whether they would be hardy) were laid down, and covered every winter after bearing. To test their hardihood, precaution being taken to save cuttings, the whole forty-five were then left as growing upon bean poles, totally exposed and unprotected, throughout the winter of 1856-7—the coldest ever known here, the thermometer, for several successive mornings, ranging from 20° to 25° below zero. The whole untransplanted row (twenty in number) stood untouched and *perfectly hardy*; about one-half of the twenty-five in the other row stood the same, and the other half lost most of their bearing wood, the surrounding Isabellas and Dianas, of older and stronger growth, suffering likewise; but none two or three feet above the surface of the ground, were at all affected.

As *evidence* of the hybridization of these vines among them, more or less, is discernible the intermixture or blending of the *peculiarity of the foliage and wood* of the different species of their parents, some, showing that of the native leaf, round, and slightly serrated, and the woolly under-surface, and bristly, wiry wood; while others, the greater number, inherit more that of the foreign leaf, with its deep lobes and serratures, and green, smooth under-surface, and large, smooth, short-jointed wood, with prominent, full buds.

In the *fruit*, also, traces of the intermixture of the *two* species are obvious in shape, color, size, and flavor, some partaking more of the *one*, and some the *other*—those of the Sweetwater variety, however, seeming more uniform than the Black Hamburg.

The *blossoms*, too, of these hybrids indicate the different peculiarities of their respective parents, some having the long, perfect filaments belonging to the foreign as, also, to the Isabella, Diana, and Concord varieties (setting their fruit better, and in more abundance from this cause, as far as noticed), and others, the *very short filament* of this native, which, though blossoming in profusion, with large flower clusters, bears fruit comparatively small in quantity and size of bunches.

The mildew, making its appearance on some of these hybrids (in a mitigated form, however), also significantly points to their foreign intermixture. Its effect, last season (an unfavorable one), was immaterial upon the foliage only; the past season (the most unfavorable one ever known here), the foliage of a few suffered considerably, in common with the Isabella and Diana, and, in a few instances, the fruit of some was attacked slightly. It may be observed that, from want of using any of the precautions mentioned in this process of hybridizing, "people may fancy they have obtained hybrids when they have gained only natural seedlings."

The result of the foregoing experiment—the only one, it is believed, on the native species of New England—would not seem fully to confirm Dr. Lindley's inferences from the experience, on other plants, of the best English authority, the Dean of Manchester, "that, as a general rule, the properties of the male parent will be most conspicuous in the hybrid," but leave an inference that the properties of one parent may be as conspicuous as those of the other, the evidence, however, perhaps slightly preponderating in favor of the rule.

In the October number of the *Horticulturist*, the Georgia Committee, in their report on grapes, say: "As Le Conte observes, 'although, among some families of plants, hybrids occur naturally, or may be formed artificially, yet it is difficult to understand how this can be the case in the genus *Vitis*,' &c., and that this process of hybridizing the grape is impossible, 'on account of the minuteness of the flower and the parts of fructification,' he might have added another difficulty: the petals are caducous, and cohere at the tips, forming a little cap, which, in the act of falling off whole, draws over, from one side or the other, almost invariably, the pollen from its own stamens upon the pistil. The chances then are that the operation on so minute a flower, in the act of removing this cap and the stamens, would have already fertilized the pistil before applying the pollen of the species or variety selected. We would not, however, assert that hybridization, naturally or artificially, is absolutely impossible, but nearly so."

From the result of this experiment, the opinions of Le Conte and the Georgia Committee, it would seem, must be conceded untenable, and the "other difficulty" obviated, if it is considered the cap and stamens should be artificially removed *before the anthers are ready to burst*, dispersing their pollen. Even, as we have usually noticed in many operations, when the cap naturally falls off, the anthers *do not burst immediately*.

It was the opinion of some very noted grape growers, although they and some learned botanists at once, from examination, pronounced these vines hybrids, that many would turn out staminate and totally unproductive plants, and the opinions of others, as, also, a writer in the December number of the *Horticulturist* remarks, the experiment would not succeed, for the reason that "there may be physiological peculiarities which often forbid the intermixture of as closely allied plants as the different species of grapes."* All these objections seem put to rest by this experiment, the whole number of vines (about twenty-five) which have shown blossoms having generally set their fruit well, and many in the highest degree of perfection.

(To be continued.)

[Remarks.—When we wrote that "the efforts of the hybridizer were yet to be heard from," we meant that a grape adapted to general cultivation, raised in that way, had yet to be introduced. We are glad that our friend misunderstood us, as it has brought forth the above statement of valuable experiments, which will be read with interest by many. The conclusion shall be given next month.

The great barrier to the successful cultivation of the foreign grape in the open air, is not so much a want of hardiness as its liability to mildew. When planted on a dry soil, as all grapes ought in any case to be, the foreign grape will stand very nearly as much ~~fast~~ as the native kinds. In cases where it is killed, the Isabella and other native grapes generally die also. In those parts of the States where the temperature is more regular, or where the changes from a very dry to a moist atmosphere are not sudden or extreme, and, consequently, the causes which are known to favor mildew do not exist, the foreign grape can be ripened with fair success. In the region of Seneca Lake, and in many parts of Canada, there is little difficulty found in ripening it, notwithstanding the severity of the Canadian winters.

Of all the foreign grapes, the Golden Chasselas seems less liable to mildew when grown in the open air than any other we have seen tried, and we would recommend it as one of the best to experiment with in hybridizing.—ED. H.]

* That this opinion is incorrect, *see*, also, the results of an experiment on the Isabella, a native of a Southern species, by I. F. Allen, Esq., Salem, Mass., in an article by Rev. J. L. Russell, in *Proceedings of the Essex Institute*, vol. i. p. 195, 1864.

EDITORS TABLE.

REPORTS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY FOR 1857.—It is really refreshing to peruse the reports of the Committees of this Society; one values the information of men who have a single eye to the dissemination of truthful facts. In these reports, we find the opinions advanced in the *Horticulturist* ably sustained, and, with one exception, we agree in the estimates of the new fruits. We shall briefly recapitulate, the sheets of the report having been kindly sent by Mr. Eben Wight, in advance of their publication.

The Committee on Gardens have visited extensively, and their report is lucid and full; that on flowers is also able. They enter their decided protest against the use of flowers as glutinized ornaments of wooden boxes, moss-covered crosses, anchors, eagles, and all that so-called floral designs. "Name the abortion what you will," they say—"design, if you please—but do not associate flowers in such a connection by calling it floral." Good advice.

The plants commended are *Styphelia tubiflora*, *Phalis grandiflora* and *maculata*, *Eriostemon cuspidatum* and *verifolium*, *Kennedia monophylla variegata*, *Cytisus monosperma*, Orange *Rhododendron Javanicum* (said to be hardy), and a fine new *Correa*, *Ne plus ultra*; a new white verbena, *Annie alba*, took the prize for the best new seedling; second, a new blue, raised by Thomas C. Whytal, and a curiously marked variety raised by W. C. Strong. The *Yenadesse* is a decided novelty. Mr. Joseph Breck has done himself great credit by this report, as well as by his general enthusiasm and excellent garden. He exhibited two seedling *Tropæolums*, named *Breckii* and *Randii*. Various other novelties are commemorated, for which we must refer to the Report.

Fruits.—Analyzing the reports on fruits, we find the season had been unpropitious for apples, cherries, and pears, many trees of the latter (such as the Bartlett, Louise Bonne de Jersey, Beurré Bose, and Marie Louise) being killed to the ground, other varieties being uninjured. The Committee truly say: "Probably no city in the Union is so highly favored as is our own in the number of enthusiastic horticultural amateurs, who make the subject a pleasure, looking after, closely watching, and encouraging the growth of fruit-trees planted by their own hands during leisure from business." We wish their good example might greatly extend.

Mr. John Gordon, of Brighton, has four acres deeply trenched and under-drained, entirely covered with pear-trees grown for market; about two thirds are on quince. He finds a ready sale for those having a reddish or russety skin, while those of a green skin could not be disposed of. All his fruit is carefully gathered by hand, and some four days before designing to market it, he takes his fruit boxes (about twenty inches square, and six or eight deep), and places some woollen substance over the inside bottom; he then places a layer of pears, and then another of woollen, and another layer of pears, covering the whole with woollen. In no case does he pack more than two layers of fruit, which is then allowed to go through a sweating process; this gives it a rich coloring, suited to market. Cotton would not ripen them so fast, and woollen leaves a finer blush on the skin. Worth remembering, truly; for while Mr. Gordon's Bartletts were yielding him ten dollars a bushel, other wagons by the side of his, had pears of the same variety, equally as large, but, in conse-

quence of retaining a green skin, were offered at three dollars per bushel. *Thorough under-draining is essential* for a fruit garden. Again: Red apples, on a yellow or russety ground, command a good price for the table, when it would be difficult to dispose of those having a green skin. Sweet apples also command a good price during winter.

Apriocots and plums have proved an entire failure, and will have to be abandoned on account of the injury from the curculio.

The Dorchester Blackberry is pronounced superior to the Lawton, except for small gardens, where they can be readily picked, and such as are ripe selected. The Dorchester is larger, and bears carriage better, say the Committee.

To get a good crop of blackberries, it is absolutely necessary to train the stalks horizontally, in order that the shoots may break at every eye, while, if allowed to grow upright, they only break at the top. The third year after planting gives a full crop.

Cherries.—Awards were given for the old varieties, Black Eagle, Black Tartarian, and Napoleon Bigarreau. Dr. Kirtland's cherries are commended, and are being introduced.

Currants and Figs.—The White and Red Dutch were the best grown, and the Victoria was nearly equal. W. C. Strong made a liberal display of new varieties; the best are Circassian, Red Grape, Versailles, and Macrocarpa. Some figs ripened in the open air, are noted.

Gooseberries.—C. Downing's seedling, and another by the Shakers of Lebanon, and one from Mr. Smith, of Vermont, all give good promise.

Grapes under glass, in great abundance, have been exhibited during the year. Mr. J. F. Allen's report on his hybridized seedlings, is not very encouraging. The question of the identity of the Prince Albert and Barbarossa, Mr. A. thinks settled.

Grapes—Open Culture.—The prospect for field or vineyard culture of grapes in Massachusetts, is not flattering. Catawba and Isabella, except in the most favorable locations, do not hold out much hope of success; and hence we may account for the Committee's differing with us regarding the Concord, which they recommend somewhat. The Rebecca succeeds, and is popular, being considered "one of the most valuable grapes for out-door culture ever introduced among us; so easy of propagation, that from one dozen vines, in the fall of 1856, a person assures the Committee he should have ready potted for sale, 3,000 vines for the spring of 1858." Not so the Delaware, which proves most difficult of propagation, either from eyes, cuttings, or layers; but it is "one of the most valuable not only for its earliness of ripening, but for its hardiness in withstanding almost any degree of cold, while the Diana was killed to the ground, and the Isabella destroyed root and branch. Compared with others, the Delaware was less subject to mildew.

The Committee next startles us with an account of the Union Village Grape, which is compared to the Black Hamburg in value. "It has not the consistency of the latter, while it possesses a sweetness at once distinguishable by the most common observer. It is one of the most rampant growers, and Mr. Bracket *claims* that it will ripen as early as the Isabella." Berries, this year, larger than the average of B. H., for which fruit it was mistaken; more time and experience are required before an authoritative opinion can be given. The Logan Grape we have spoken of elsewhere. Mr. Bracket thinks the Concord will make a fine brown sherry wine, and assume great importance; and, he adds, that Union Village should have a light, sandy, or gravelly soil.

Pears.—The Beurré Superfin, figured some time since in the *Horticulturist*, promises to become a valuable variety; Beurré Sterckman, very handsome; Abbott, another very excellent native pear; Henkel, of great merit; St. Michael Archange, large and fine; Merriam, of remarkable excellence; Supreme de Quimper, from Messrs. Hovey, proved one of the best early pears—quite equal to the Doyenné d'Été, and much larger; Beurré Clairgeau is likely to prove equal to its reputation when the trees are more advanced. Age is undoubtedly required with this as well as many other pear-trees, to establish the true qualities.

Raspberries.—Dr. Brinklé's Orange is the favorite. The Catawissa has been grown by Mr. Breck, who has a highly favorable opinion of it; but there has been no exhibition of the fruit in Boston.

Strawberries.—The Lyman plate (value, fifty dollars), the previous year was awarded to Isaac Fay, for the Jenny Lind; but no distribution is made this year. The best shown, this season, has been Sir Charles Napier, by Messrs. Hovey.

The entire report is of interest, and we cannot close our condensed account of it (which embraces the leading facts) without again expressing our wish that the knowledge and enthusiasm of the Bostonians may rapidly spread.

Mr. Cabot, on retiring as President, received a present of plate of the value of one hundred and fifty dollars; and Eben Wight, Chairman of the Committee on Fruits, plate to the value of one hundred dollars. Josiah Stickney was elected President.

Fruit Growers of Western New York.—No official report of this meeting had reached us in time for this number.

Ohio Pomological Society.—The same may be said of the *Transactions* of the Ohio Society; of both we shall give the substance soon.

The Patent Office Report on Agriculture contains some matters of interest to our readers, and to agriculturists, and cotton planters, especially—is valuable. As usual, it is carelessly printed, and on very poor paper.

Dexter Stone's Verbenas, with new and valuable additions to his stock, are advertised this month. We indorse all he says.

EXPERIMENTAL GARDENS.—A correspondent, whose suggestions we always value, asks us if the idea of an experimental garden is given up, and why. To this the answer is easy. In an early number of our labors, the topic was discussed, and made its impression, but, so far, it has resulted only in the conviction of the propriety of such an effort, which, we are happy to know, is gaining ground. The triumph which such a plan, properly carried out, would give to any one of our great cities, can scarcely be appreciated, any more than the benefits to the public. It would afford an example which thousands—aye, hundreds of thousands—would annually visit and profit by. It is not to be put down by a cynical frown. Things barely of use are subjects for professional skill and scientific inquiry; they must also be beautiful and pleasing, to attract common attention, and to be naturally and universally interesting. The progress of civilization and refinement is from instrumental to final causes; from supplying the wants of the body to providing luxuries for the mind. To stop at the *mechanical*, and refuse to proceed to the *fine arts*, or churlishly to reject all ornamental studies and elegant accomplishments as mean and trivial, because they only afford employment to the imagination, create food for thought, furnish the mind, sustain the soul in health and enjoyment, is a rude and barbarous theory.

It has been said that an experimental garden would injure the business of the nurseryman. This is on a par with the old axiom, now utterly exploded, that machinery injures labor. It would be exactly the reverse. The education which its visitors would receive at every visit, would create an immense demand for what is now only sold occasionally.

We are sure that the intelligent portion of the trade would not only *feel* an interest in such a project as we are advocating, but we know many that would *take* an interest and shares, and by every means in their power assist it. It is just such means combined as they possess that we want, to make a perfect thing.

We have heard a poor painter decry the introduction into America of the finest works of art. "Let us," he said, "encourage our own painters first!" But this cannot be until a taste for good pictures is taught by excellent examples; there will be no taste, and painting will forever be in inferior hands, because (there being no educated taste) there can be no

demand for excellence. A man who has frequented the Dresden Gallery, will detect at a glance a miserable daub, whether he see it in Italy or his own parlor. It is so in gardening. Those who have never seen a fine garden, or acquired a love for fine and various trees, are content all their lives with inferiority, because their taste has never been stimulated or educated.

Nature is not limited, nor does it become effete, like our conceit and vanity. The closer we examine it, the more it refines upon us. It expands as we enlarge and shift our view; it "grows with our growth, and strengthens with our strength," and our capacity is invigorated as it is called out by occasion and necessity. He who does nothing, renders himself incapable of doing anything; but while we are executing any work, we are preparing and qualifying ourselves to undertake another. The principles are the same in all nature, and we understand them better as we verify them by experience and practice. Expenditure of intellectual wealth makes us rich; by lying idle as by standing still, we are confined to the same trite, narrow round of topics. By continuing our efforts, as by moving forwards in a road, we extend our views, and discover, continually, new tracts of country. Humanity rusts for want of use.

The application is this: We can name more than one horticultural society whose exhibitions no longer pay expenses; the public have become satiated with the repetition of the same repasts; they want *something new*, and something new they will have. The exhibitions have educated the public up to a certain point; we now want *progress*. We should show them what can be done; what beauties can be developed in a garden; *out of doors* exhibitions, and a band of music, amid the best productions of trees, flowers, and lawns. With these, horticulture, arboriculture, floriculture, would make new strides in our country, learn to run, and not *walk* lazily along as is now fearfully the case. As soon as one of our cities shows an experimental garden properly founded, it will be the fashion everywhere, just as it was only necessary to show one example of a good rural cemetery, to introduce them all over our land. The city that first takes the lead, will be the most benefited; the stockholders will reap a rich reward in the rise of their land, and so forth, and all will ultimately acknowledge it a better, more useful, and more profitable scheme—more educating than a dozen Academies of Music, however valuable they may be in their place. If it should even prove partially unprofitable, in a pecuniary view (which, with judicious management, it would not), that man or that city which founds it, will be a public benefactor.

Josiah Stickney, the new President of the Massachusetts Horticultural Society, said in his speech on his election:—"I look also to the establishment of an experimental garden, whenever our means may permit, and circumstances favor it, as one of the best and most effective means of promoting the objects of the society, and one that should never be lost sight of."

FEEDING BEES.—Bees should always be considered as natives of a warm climate, by which means we can account for their ways being opposed to their own security. Instead of their keeping together in a strong colony, they break off into small ones, and are thus weakened and rendered unfit to collect sufficient store for winter. The exact quantity of food requisite to keep a colony in good condition during the winter, is not easily fixed: 10 lbs. and 15 lbs. have been named, but we think that the latter quantity is the safest; and if it reach 20 lbs., so much the better; still, colonies short of the first quantity named should be fed, and the hives made snug for winter. The less room bees have during that time, the better for their health; for all the combs that they do not cover take more or less harm, and the pollen is rendered unfit for use in the spring; consequently, all communication should be closed from any extra room given to the hives in summer, and their doorways lessened or closed, except a few small holes for air. In general, we prefer the latter, for the instinct in

bees is still obedient to the laws which govern the climate whence they originated, and, consequently, many of them are deceived by the warmth of a winter's sun, sally out, and are either picked up by birds, or perish in the snow.

WEeping ROSES (which are vigorous growing varieties, worked five to seven feet high) merely require the gross unripe shoots, and those which are overcrowded to be taken out, and the others left unpruned. These, for the first year or two, should be trained round a small iron hoop, placed underneath the head of the plant; in a short time, they will form most beautiful pendulous trees, requiring little or no pruning.

GARDENING.—There is a pleasure in a garden which none but gardeners know. From the moment you love the art, and look nature in the face, you are at peace with your own heart; you have no absurd opinions to combat, no point to strain, no adversary to crush, no fool to annoy. You are actuated by fear or favor to no man. Patience grows out of the endless pursuit, and turns into a luxury. A streak in a flower, a wrinkle in a leaf, a plant in perfect health, gives us enjoyment for another half day. The hours pass on untold, without chagrin, and without weariness; nor would you ever wish to pass them otherwise. Innocence is joined with industry, pleasure with business, and the mind is satisfied.

Experimental gardening is, undoubtedly, the backbone and marrow of the craft. The gardener who makes no experiments, says a late writer, is not worth salt to his porridge.

THESE AMERICAN FRUITS.—The reports from the American fruits at the London Horticultural Exhibition, are not all *couleur de rose*. The *Cottage Gardener* is particularly offensive in saying: "The American pears looked as if they were from the sea-shore to the west of Liverpool, where they were starved in sand, roasted by a burning sun, and salted by the sea-spray. The pears from Nantes were much better, but not nearly so good as our English pears." This is bad enough, to be sure, but we must put a little of it down to prejudice, and a great deal to the voyage.

Notwithstanding the above, the best 70 or 80 of these pears were sent to Windsor to the Queen, and Messrs. Hovey have received the large silver medal, through the United States minister, for the collection.

OTHER FRUITS.—The same journal says: "The finest Medlars in the country were there, and, also, the 'Prickly Pear' of the South of Europe—a very wholesome fruit, which makes a beautiful dish in the dessert. This is the fruit of the common *Opuntia vulgaris*, and the 'Indian Fig' of ordinary travellers. There were also purple Guavas and Shaddocks from Sion House, together with the rarest fruit in England, the Chocolate fruit, which is the chief ingredient in 'that excellent cup of chocolate.' The Chocolate-tree (*Theobroma cacao*) is a most beautiful-leaved tree, with flowers as insignificant as those of the Black Currant, and not unlike it. The flowers come in short, dense clusters from the old wood, and the fruit is about six inches long, pointed at both ends, otherwise egg-shaped, and slightly ribbed. The shell is of a light color when ripe, and splits open at the end furthest from the stalk. The seed or fruit is inclosed in a white pulp, from which strong whiskey is distilled in South America."

There was a fine dish of the ripe fruit of the *Benthamia fragifera* (huge strawberry-looking fruit), from Mr. Cox, gardener to W. Wells, Esq., Redleaf, Kent, which was gathered from a standard in the open air—another proof of the 'extraordinarily fine season we have just gone through. Also, from the same, a beautiful dish of the *Cape Gooseberry*, in their finely-bleached envelopes. This is *Physalis edulis* of botany. The seeds are sown early in the spring, and the plants are fruited in the greenhouse.

SOUTH CAROLINA PRODUCTIONS.—We are indebted to the Hon. William Elliott, of Colleton District, S. C., for fine examples of some Carolina productions. The sweet potato is very superior to that of the North—sugary, and of a better taste. It should constitute an article of large export. The Palmetto cabbages were extremely good, differing slightly from the cabbage of the Royal Palm, in Cuba, and with what Mr. Elliott calls a "wholesome bitter, like that of matrimony!" The pomegranates were large, and remarkably fine. Considering in what perfect order all these things reached us, the wonder is that our cities connected by steam receive so few of them. We suppose cotton is more profitable.

DIOSCOREA BATATAS.—In reply to Mr. Fall's invitation to others to communicate their experience of this vegetable, we have several communications, favorable and unfavorable, and shall endeavor to give a summary next month.

Boston, January 11, 1858.

MR. J. JAY SMITH: I feel moved to express to you my pleasure not only in the opinion you gave, in the December *Horticulturist*, of the Concord Grape as compared with the Isabella, but in the two remarks you so nicely tucked in (and so decidedly, too) in the clause on the Concord Grape, in the article on "Grapes" in the January number of the *Horticulturist*. I will say no more, at the present time, than to express my regret that new plants should be sent out, from time to time, so misrepresented as they are, and two of the most notable instances recently occurring not abroad, but at home. Respectfully, SOLON.

THE TRAVELLER among the Alps is annoyed at every celebrated scene with applications and solicitations to pay for some appliance he has never anticipated. On the Wengern Mountain, you are desired to pay five francs for an *avalanche*! and soon discover that a gun is loaded, to bring down the snow by its reverberating influence, and that on no other terms can you enjoy the spectacle. De Quincy relates a similar charge made during a tour in the lake region. The bill contained this uncommon item:—

"To an echo, first quality.	£0 10s. 0
"To " -second quality	0 5 0

It seems the price of echoes varied, reasonably enough, with the amount of gunpowder consumed. Half-crown echoes might be had by those base snobs who would put up with a vile substitute for the genuine article.

It is computed there has been 37,000 Americans in Europe the past season!

MICHIGAN TRANSACTIONS.—The indefatigable and useful Secretary of the Michigan Agricultural Society, Mr. J. C. Holmes, has forwarded us the *Transactions* of the Society for 1856, making a portly octavo of nearly eight hundred pages. It is full of interesting matter, of a practical kind, some of which we shall copy when we are less crowded than at the present time.

MR. SIMPSON'S GRAPE METHOD.—The report of the Committee of the Massachusetts Horticultural Society assures the world that Mr. Simpson's two-crop system of cultivating grapes under glass, has proved successful. "The time to ripen grapes averages from four and a half to five months; and thus leaving a month for the ripening of the wood, a crop might be matured every six months. Mr. S.'s practice, however, is to allow the vine to grow naturally, without forcing, every other year, thus preventing any exhaustion which might ensue from continued forcing. The vines grown are Syrian, Hamburgs, Muscats, Black Prince, Zinfudal, Frontignans, and Macready's Early." The Committee on Gardens give high praise to Mr. H. H. Hurdnewell's, as well as to his gardener, Mr. Harris.

NOTES FOR THE MONTH.—We trust that practical persons interested in gardening, peruse regularly the "Calendar of Operations" (now called "Notes for the Month") which close each number of our monthly records. They are original essays, by able penmen who have a love for the subject, and are not repetitions month for month. Mr. Buchanan, as a writer on grape culture, has no compeer; and we have yet to meet with the man who has more useful and practical knowledge for the purposes of an adviser in the garden and greenhouse than Mr. Saunders.

THE LOGAN GRAPE.—Mr. A. Thompson, of Delaware, Ohio, writes a highly favorable account of a new native grape called the Logan. It is a black grape, ripening before the Catawba, and preferred to the Isabella, and is believed to be a wildling of Ohio; hardy, vigorous; wood, short-jointed and compact; distinct in wood and foliage, productive, and probably the earliest hardy grape of fair quality in cultivation, and will ripen its fruit several degrees further north than the Isabella and Catawba.

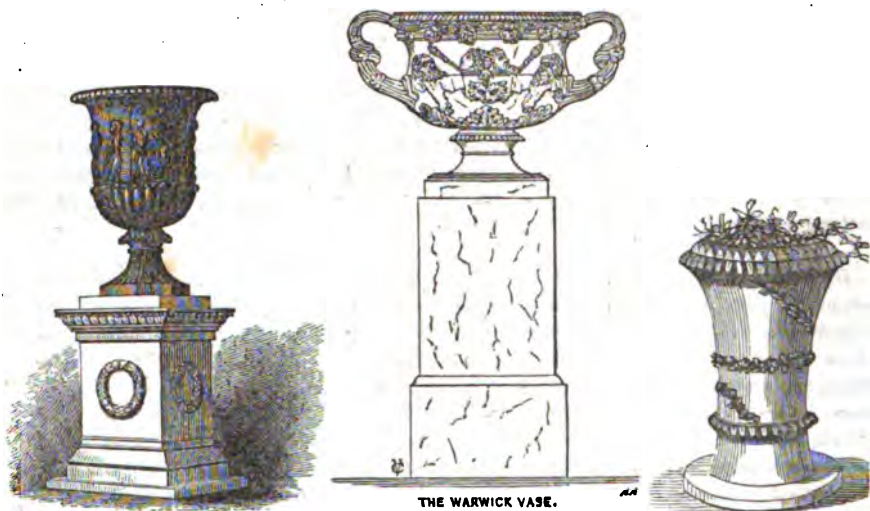
HEAT, VENTILATION, RAIN.—In the best plant houses, the pipes for heating the building are placed immediately fronting the ventilators, in the basement wall, so that all the air admitted into the house from below, must necessarily pass through, or come in contact with, these heated pipes, and, therefore, that great *desideratum* in ventilation, a circulation of warm air, is easily effected. This very important and highly necessary precaution should never be lost sight of by the architect in constructing horticultural buildings, too many of which, and even very modern ones, are built and ventilated without the least provision being made for warming the air admitted into them by the ventilators, and without a proper circulation of this in some way or other, no plants will flourish. Live they may; but when partially deprived of pure air, they only linger out their lives in a pallid, enervated, and undeveloped state, more of a disgrace to an establishment than a decoration. And let the opponents of a more free circulation to tropical structures bear in mind that even the most sultry forests, swamps, and savannas of the tropics abundantly afford to plant and animal life that which many a modern cultivator of exotics almost denies; for instance, nearly all our richest and most delicate Orchids inhabit regions in which, for nine months in the year, Aquarius is in the ascendant, and almost unremitting rains prevail.

Everything depends on beginning right. In some plant and forcing-houses which we inspected lately in Philadelphia, the whole cost—and most extravagant was the outlay—has been thrown away by the absurd manner in which the work was executed. The costly hot water pipes in the grapery are useless for forcing, because of the openness of the glazing; the glass in extensive forcing-pits is so awkwardly glazed in wooden rebates, that when a pane is broken in the top or middle, all below it have to be forced out to replace the damage, and much time is lost, as well as glass broken, in the operation. It is no doubt the fact that the charge made by experienced superintendents of glass structures is as important a saving, as the percentage of an architect in the building of a house mostly proves an economy. Let no one attempt a glass structure without good advice.

Mr. G. C. THORNBURN, Newark, N. J., has just received an extraordinary lot of the newest and best Dahlia roots, new Verbenas, new Phloxes, &c. The *Geant de Batailles* is a marvellous Scarlet Verbena.

DAVID J. GRISCOM's nursery of evergreens, shade trees, fruits, vines, roots, &c., at Woodbury, N. J., is within an easy ride of Philadelphia, and offers, at this time, great attractions to purchasers. We recommend the worthy proprietor for his enterprise, and know him to be every way reliable.

VASES FOR GARDENS are beautiful when furnished with fine plants, and when so furnished, there are few objects more chaste or suitable as ornaments to those portions of a garden which are near the house. If filled with plants, they should all be growing, and in high condition, the blooms mingling and clustering thickly in well contrasted colors. The ver-



benas mixed in this way, trail over, and produce a charming effect. Petunias, heliotropes, and other low-growing, half-creeping exotics, are excellent. The dark nasturtium also looks well when partially covering the base with pendent stems and rich blossoms. Geranium, cineraria, calceolaria, noisette roses, orange and lemon-trees, Collinsia, nemophilla, schizanthus, balsam, cockscomb, anemone, and all kinds of bulbs, especially hyacinths, are suitable, though not so desirable as the perpetually blooming plants. The plants should all be grown in pots, and these set in the vases whenever it is desired to change them, which would be the case with hyacinths. The beautiful native, *Mitchella repens* of the woods, makes a good vase and hanging plant. The blue Lobelia is unrivalled.



Very pretty wire baskets and vases are now made to set flower pots in, or for glasses to hold bouquets, of which the accompanying design is a specimen.

"Better hang a wild rose over the toilette," says Leigh Hunt, "than nothing. The eye that looks in the glass will see there something of a right to respect itself, in thinking by how many objects in the creation the bloom of beauty is shared!"

Speaking of breakfast, in summer, the same prince of essayists says: "Set flowers on your table—a whole nosegay, if you can get it, or but two or three, or a single flower—a rose, a pink—nay, a daisy. Bring a few daisies or buttercups from your last field walk, and keep them alive in water, and preserve but a bunch of clover, or a handful of flowering grass (one of the most elegant as well as cheapest of nature's productions), and

you have something on your table that reminds you of the beauty of God's creation, and gives you a link with the poets and sages that have done it most honor. Put but a rose,

or a lily, or a violet, on your table, and *you and Lord Bacon* have a custom in common; for that great and wise man was in the habit of having the flowers in season set upon his table morning, noon, and night—that is to say, at all his meals; for dinner, in his time, was taken at noon. And why should he not have flowers at all his meals, seeing that they were growing all day? Now, here's a fashion that shall last you forever, if you please—never changing with silks and velvets, nor dependent upon the caprice of some fine gentleman or lady. The fashion of the garments of heaven and earth endures forever, and you may adorn your table with specimens of their drapery, with flowers out of the fields, and golden beams out of the blue ether."

THE WEATHER.—A mild winter, thus far (contrasting most remarkably with the last two), has given opportunity for out-door employments that will greatly facilitate operations in the spring. December was almost unprecedentedly free from hard frost, and January here has been more like a spring month than is remembered for a very long time. On the 11th, we had lightning, and a heavy, warm rain, with the thermometer at 61°, and up to the period when we write (the 21st of January), it has been almost like May.

The following, compiled from the daily papers, will be curious to refer to hereafter:—

	Jan. 1, 9 o'clock A. M.	14th.	15th.	16th.
<i>Chicago.</i> Clear and mild . . .	32 degs.	35 degs.	31 degs.	36 degs.
<i>Janesville, Wis.</i> Clear and mild . . .	30 "	25 "	33 "	
<i>Fulton, Ill.</i> Pleasant . . .	26 "	30 "		
<i>Prairie du Chien.</i> Pleasant . . .	20 "	22 "	34 "	
<i>Milwaukee.</i> Pleasant . . .	35 "	32 "	32 "	
<i>Cairo, Ill.</i> Cloudy and cool . . .	30 "	30 "	45 "	
<i>Springfield, Ill.</i> Cool . . .	40 "	34 "		32 "
<i>Fond du Lac, Wis.</i> Pleasant and clear . . .	28 "	40 "		
<i>St. Louis.</i> Mild and clear . . .	44 "		44 "	
<i>Peoria, Ill.</i> Clear . . .	35 "			
<i>Burlington, Ill.</i> Mild and clear . . .	25 "			
<i>Rock Island, Ill.</i> Clear and pleasant . . .	39 "			25 "
<i>Dubuque, Iowa</i> . . .	25 "	28 "	36 "	22 "
<i>Pittsburg.</i> Pleasant and clear . . .	46 "	36 "	42 "	42 "
<i>Cincinnati, Ohio.</i> Clear and pleasant . . .	45 "	28 "		
<i>Buffalo.</i> Clear and mild . . .	38 "	28 "		37 "
<i>Louisville, Ky.</i> Clear and cool . . .	37 "		32 "	
<i>Toledo, Ohio.</i> Cloudy—wind, west . . .	44 "		42 "	42 "
<i>Columbus, Ohio.</i> Clear . . .	44 "	38 "	44 "	
<i>Cleveland.</i> Cloudy—wind, west . . .	46 "		42 "	36 "
<i>Toronto.</i> Mild and clear . . .				
<i>Detroit.</i> Cloudy and windy . . .	38 "		35 "	
<i>Montreal, C. W.</i> Cold and clear . . .	44 "	22 "		34 "
	(river closed)			

The foregoing is sufficient to record the extraordinary state of things in the middle of January, 1858. Vegetation, in some instances, has made progress, and, in New York city, we hear great complaints from travellers that mosquitos were very numerous in the well warmed hotels.

The *Jasminum nudiflora* never had, in our latitude, so fine an opportunity to display its winter beauty; the *Chimonanthus* (winter flower) *fragrans* rejoiced in the mild season; the Red-bud Maple did its best to show out its blossoms, and, on the whole, we have had an experience which rendered Cuba no longer a necessity.

The last *Flore des Serres* contains, among other things, a well executed view of the opened fruit of *Heliconia bipar*, looking like a great Iris, and one of *Eucharis Amazonica*, a very fine variety of *E. grandiflora*, and a new white flowered *Amaryllid*.

THE POTATO DISEASE has made great progress in England and Ireland, the past season. So convinced of the injurious effects of the potato are some of our physicians, that they have denied their use to children, as liable to create eruptions, and to injure the stomach. It is becoming a serious thing, indeed. We refer the reader to an article on the Chardon potato in the present number.

THE GREAT PEAR.—A pear was exhibited at the stall of H. Gushee, Washington Market, which was raised on the farm of George Walling, on the Willamette River, a few miles above Portland, Oregon; it weighed four pounds, was eighteen inches round, twenty-one inches in long circumference, and surpassed the great "Beard Pear" by a quarter pound. The account of this pear represents it as having grown upon a graft of the Pound Pear, or, correctly named, the Black Pear of Worcester. The graft was inserted into the White Hawthorn some three years since, and the tree plentifully watered.—*California Farmer*.

BANGOR, ME.

J. JAY SMITH, Esq.—DEAR SIR: I am pleased you are giving attention to the *open-air culture* of grapes. The January number is valuable on that account. Samuel Miller's communication is highly interesting, and likewise Daniel S. Dewey's. We here think very highly of the Delaware and Rebecca Grapes. I have a lot (fifty vines of each) which I ordered from G. W. Campbell, Delaware, Ohio, and from Dr. C. W. Grant, of Iona, N. Y. For a common, good, early grape, the Hartford Prolific is a highly valuable variety for *Maine*. It is sure to ripen. We are planting also the Diana, which is much esteemed everywhere. Probably, the Delaware and Rebecca will outstrip any other two varieties in these parts, at present.

Most sincerely,

HENRY LITTLE.

SEEDS BY MAIL.—Mr. Henry A. Dreer, No. 327 Chestnut St., continues to oblige a large circle of customers by sending choice flower seeds by mail. His catalogue—a very good one—may be had by inclosing a penny stamp, and the selection you make *comes up* directly after he has *planted* the seeds in an envelop, and placed them in that accommodating *ground*, the post-office window.

ERRATA.—On page 34, the Alexander Pear, M. Calvin, Esq., should read Mr. Calvin Ely; and two years ago should read *twenty*.

ANSWERS TO CORRESPONDENTS.—(JOHN WATSON, West Farms, New York.) 1. The horse droppings that are used for growing mushrooms ought to be collected from animals that are fed on *dry* herbage, and they should be kept *entirely* free from rain or water while in preparation for receiving the spawn. 2. Succession beds may be spawned from the "beds in crop," by taking a portion of the upper bulk (containing the spawn), and spreading a thin layer over the new bed previous to soiling. The same may be done from a worn-out bed that has been kept dry.

Under the stage of a plant-house is too damp for a mushroom bed, unless extreme caution is used against drip. Imported spawn is most commonly worthless, the rhizoma being often killed by the penetration of the smell of bilge water and damp combined.

(T. T.) The Kentucky Coffee-tree, *Gymnocladus Canadensis*, is usually propagated from seeds, but there is no difficulty in raising it from cuttings of the roots, care being taken, in planting, to keep that end upwards which is naturally so. It is indispensable to every collection—beautiful at all seasons. The flowers of the Judas-tree, *Cercis siliquastrum*, are sometimes fried in batter as fritters, and the flower buds are pickled in vinegar. The same may be said of the Canada Judas-tree, *C. Canadensis*, the young branches of which will dye wool of a nankin color.

(G. S. W.) For early potatoes, we can recommend the walnut-leaved. They are very superior.

J. JAY SMITH, Esq.—DEAR SIR: Herewith I send you a specimen of *Cuphea emmens*, from a plant that has been in bloom since the end of September. It is one of the new plants of 1857, and pre-eminently an acquisition for winter blooming in either the greenhouse or parlor, and will be a perfectly hardy plant for the Southern States. You will observe that the flowers are in profusion, each one and one-half inch long, and all shades of color from yellow to bright red; the plant is full of foliage, and of easy culture in any rich, sandy loam.

R. BUIST.

[This is certainly a valuable plant. We received it in 1857, from Mr. Thorburn, of Newark, and noticed at the time its beautiful flowers and foliage.—ED.]

(HENRY C. BLIGHT, Illinois). We have no personal knowledge regarding the "Massachusetts White Grape." The proprietors who advertise it would do well, if it is valuable, to send specimens further south.

Po'kepsie must write better verses than he has sent us on the "Hemlock," if he expects to become a poet.

W. H. REED (Canada West). Your interesting communication on Grape Mildew will be given in our next.

W. C. STRONG's article on *Wiegelia Middendoriana*, next month.

J. B. WATERBORN (Mass.). Loudon's *Encyclopedias of Gardening and of Plants*, are two separate works. The price of McMahon's *Gardening* is one dollar and a half. Philadelphia: Lippincott and Co.

(J. S. S.) Steam ploughing has not yet been perfected in England. Our people are waiting till it promises greater usefulness and economy, than has yet been attained. There are four patents, and if they could be combined, it is believed something might be effectively done. Wait-a-bit, is the plan here. It is coming.

(M. H. H.) The scarlet Flag is the *Gladiolus Cardinalis*, and we happen to know may be procured of Mr. Buist, Philadelphia, and no doubt of others.

The *New Hop Tree* is simply the old one, *Ptelia trifoliata*.

(S.) Your plants are, 1, *Aphelandra Griesbreehii*, and 2, *Ipomœa bona nox*.

(W.) The Australian Ivy, French Ivy, &c. &c., which has been without a name so long, has flowered lately in this vicinity, belongs to the natural order, Compositæ, and is a *Senecio*, but exactly what the books have not told us. It is a rapid grower, bears parlor heat or a little frost, and, with its beautiful ivy leaf, is a very desirable plant.

(COLLEGE HILL SUBSCRIBER.) We shall endeavor to comply with your request.

CATALOGUES, ETC., RECEIVED.—Catalogue of Fruits and Ornamental Trees, Evergreens, &c. &c., cultivated and for sale at the Hopewell Nurseries, near Fredericksburg, Va. Henry R. Robey, proprietor. This catalogue contains a most valuable list of apples of Southern origin, and will, we trust, receive attention from our numerous Southern readers.

Catalogue of the Gilead Nursery, near Cardington, Monroe County, Ohio. W. B. Lipsey, proprietor. An excellent list.

Catalogue of Fruit and Ornamental Trees, Shrubs, and Plants, &c. By F. Trowbridge, New Haven, Conn. Fourth edition, 1857-8. This contains an essay of value on cranberry culture, and another on the blackberry, from which wine is now made.

Mr. J. C. Thompson, of Tompkinsville, Staten Island, N. Y., sends us a long list of certificates in favor of the Wyandot Prolific Corn, which seems to be worthy of attention.

Catalogue of the Corporation, Officers, and Students, of Hamilton College (New York). There are some good people there.

S. Miller's Calmdale Nursery Catalogue, near Lebanon, Lebanon County, Pa. Mr. Miller has a great variety of fruit-trees, and grape-vines, &c.

Catalogue of Fruit and Ornamental Trees, Shrubbery, Vines, Roses, and Greenhouse Plants, cultivated and for sale at the Cherry Hill Nursery, West Chester, Pa. Josiah Hoopes, Proprietor. A very interesting, large, and creditable collection.

Catalogue of Fruit and other Trees, Grape Vines, &c. &c. Cultivated and for sale at the Fruitland Nurseries, by Redmond and Berckmans, Augusta, Georgia. This is the first issue of a catalogue by a firm commencing under uncommonly favorable auspices. Mr. B. is the son of our friend, the well-known pomologist of New Jersey, "L. B.," who transfers to the genial climate of Augusta, those fruits best adapted to the South, and who being devoted to the topic, and filled with information, will give advice to the firm, whose intention it is to build up a first class Southern Nursery; with that view they have mainly propagated the finest varieties of Southern Fruit. Pomology is advancing rapidly in that region.

GOSSIP.

— Ireland is taking a lead in a movement for the scientific training of agriculturists. A great farm school has been established at Glasnevin, near Dublin.

— The cook of Louis XVI. was known all over Europe for his mode of serving up eels. His receipt was this: "Take one or two live eels; throw them into the fire. As they are twisting about on all sides, lay hold of them with a towel in your hand, and skin them from head to tail. This method is decidedly the best, as it is the means of drawing out all the oil, which is unpalatable." The consumption of eels as articles of food, throughout Europe, is enormous. In London, the number imported amounts to about ten millions annually; it is food alike for the alderman and the gamin in the streets.

— In the earliest period of Roman history, every family had its garden, and as little animal food was consumed, it was from this source that the population principally drew its subsistence. Hence, in the laws of the Twelve Tables, the term *hortus* is synonymous to *heredium*, or inheritance; and the word *villa* is nowhere made use of. As a proof, indeed, of the honor paid to gardens by the old Romans, Pliny remarks that men of the highest rank were willing to borrow their names from its contents, as in the Valerian family, and the *Lactucarii* did not think themselves disgraced by taking their names from the Lettuce. These, however, were mere kitchen gardens, containing such plants and trees alone as were subservient to the daily uses of life; and in Cato's work, the only notice we have of a garden is of this description, although it be true that, according to Pliny, he recommended that plants which could be used for chaplets, should be likewise cultivated in it. In proportion, however, as civilization and wealth increased, a taste for ornamental plants became prevalent; and even in Rome itself, as we are informed by Pliny, it was the fashion of the day, among the lower classes, to have little gardens in the front of their houses, until debarred from that indulgence by the necessity of shutting out the robbers which so abounded in the city.

— The melancholy scratch of the "Death Watch" (*Anobium*) loses all its terrors when it is known that this ominous sound is not a voice, but the mere result of mechanical friction. You have only to send him a counter-scratch from your side of the wainscot, when, mistaking you for a brother *Anobium*, he returns the signal. Entomologists declare that they have been able to train *Anobia* to do this trick at pleasure, by first accomplishing themselves in the accurate mimicry of the sound.

— Wasps and flies may be caught in graperies by placing several small bottles, containing a mixture of beer and sugar, or molasses, in different parts of the house. The bottles

should be emptied as often as filled with the pests. Fine netting, so fixed that the lights will slide up and down without interruption, will also be a good remedy. Improper ventilation, and a damp atmosphere, are, however, greater evils.

— Professor Kirtland declares himself, in a letter to the *Ohio Farmer*, an entire convert to the discoveries of the Rev. Mr. Langstroth, in regard to the improvements in hives for bees, and the management of the honey-bee, considering it, beyond question, the true mode. The book of Mr. L. is published by Saxton, New York.

— The Big Tree Grove, which we formerly announced (says the *California Farmer*), has added to its celebrity another group, discovered by Mr. Galen Clark, who was with us when we measured the first group. The *Mariposa Gazette* tells us that Mr. Clark, who resides at the South Fork, recently, while on a hunting expedition, discovered another group of these trees (eighty-six in number), situated about one mile south of these latter. He had no means of measuring them accurately, but estimates that there is one among the number which will exceed in size any of those previously discovered. According to his enumeration, there are now five hundred and sixty-three comprised in the three groves.

— The same paper says: "Having written considerable, the present week, upon the value of our fisheries, it would be an omission, on our part, if we did not notice the great fish—a species of bass—which was caught in a seine, at Saucelito, last week. With one exception, it is the largest ever caught on this coast. Its dimensions are as follows: Weight, 187 pounds; length, 6 feet 2 inches; girth of the body, 4 feet 2 inches; girth of the head, 3 feet 4 inches; width of the tail, 2 feet; color of the flesh, reddish-white. The fish was of fine form, and the scales were nearly the size of a quarter of a dollar. It was exhibited and sold at the Washington market."

— Every parent must have remarked the pleasure which children take in the acquisition of a new brood of chickens. The keeping of these domestic birds calls forth one of the faculties of the young which demands cultivation; but most fathers and mothers are contented when they have provided a pair or two for the instruction of their offspring. This is not enough. The same desire which prompts to observing the new brood, if carried onwards, would make naturalists and accurate observers of insects and birds. One of the most valuable mental acquirements is the power of discriminating among things which differ in many minute points, but whose general similarity of appearance usually deceives the common mind into a belief of their identity. The study of insects, in this point of view, is most peculiarly adapted to youth. In this study, the knowledge of things should go along with that of words. "If names perish," says Linnaeus, "the knowledge of things perishes also. To name a plant, or an insect, or a bird, or a quadruped, rightly, is one step towards an accurate knowledge of it, though it is not the knowledge itself. It is the means, and not the end, in natural history as in every other science."

— Adversity is like the cold March wind which shakes the trees, bending them to the dust, breaking, oftentimes, their groaning boughs, but which loosens the earth at their roots, so that the sap ascends, and the green buds blossom forth.

— A central spot of the Rocky Mountains (24° of latitude by as many of longitude in extent) has the verdure and freshness of high mountains in Europe in summer, the snow and ice remaining late; but very much of this district is one of plateaus in its surface character, and, in its consequences, in every respect sandy, arid, treeless, and saline, in alternating tracts, interspersed, of course, with rich valleys. All the mountains near the Pacific coast are of great altitude, and affect the climate. Between the coast and the first range, the humid atmosphere and warm winter of Western Europe prevail, while, east of that, the change is such as to render it nearly a continental climate, with an atmosphere generally dry, and with variations of temperature similar to those of the Eastern United States. Passing the second range, the change becomes quite extreme from the climate of the coast,

and the country has very few cultivable districts. The northern areas beyond the United States, are very low, on the whole, and the great interior of British America is scarcely above the average altitude of the Mississippi Valley. Thus the great portion of the continent north of us is a low plain, so little elevated as to soften the climate rather than otherwise—a fact of the greatest interest for unborn millions of men.

— Animals exposed to cold—breathing a colder, and therefore a denser air, containing more oxygen or fuel-burner per cubic foot—animals exposed to cold, requiring, therefore, greater expenditure of fuel to maintain the animal heat—do not, in practice, prosper as if kept in warmth and dryness. Most of their food goes as fuel; a great deal of their food is wasted and burned up within them. Again: Animals allowed to run about and take muscular exercise (thereby increasing the rapidity of respiration, keeping the bellows blowing at the fire within the lungs), do, in effect, not increase in fat or flesh so fast as when kept within bounds, and hindered from running to and fro. In all these particulars, then, the experience of the farmer tallies with the theory of growth as laid down by the chemist and animal physiologist.

— Hydrangeas of a beautiful blue may be produced, it is asserted, by giving the plants plenty of mould from fir leaves.

MISCELLANEA.

A MAMMOTH SQUASH.—We look to California now, for our big articles, and record to-day, from a late *California Farmer*, a squash at the Exhibition, "by D. S. Campbell. Weight, 264 pounds. Circumference (long way), eight feet. Circumference (short way), seven feet. Was raised by Mr. Asa Vestal, on his farm, one mile from San José. The Committee of the Santa Clara Fair, held at San Jose, last week, decided that there were sixteen hundred pounds of squash growing upon the same vine that bore this. The seed is known as the Camanche variety, native of Northern Mexico; was planted in April, and pulled 17th September. Soil, sandy loam, fourteen feet deep to subsoil, and watered by irrigation."

LIST OF TWENTY-NINE PLANTS TO BLOOM DURING WINTER IN A COOL CONSERVATORY.—The blooming will last from November to March:—

Chrysanthemums of sorts.
Scarlet Geraniums.
Flower of the Day, ditto,
Camellias.
Fuchsia Dominiana, serratifolia, &c.
Mignonette, French.
Poinsettia pulcherrima.
Orange-trees.
Salvia splendens and Gesneraeflora.
Balsamina (Impatiens) Jerdonia.
Daphne Indica.
Ageratum.
Heliotropes.
Linum tigrinum.

Tropæolum Canariense.
Roses of sorts.
Gesnera zebrina.
Primulas.
Pinks.
Epacris.
Heaths.
Epiphyllums of the Cacti tribe.
Cyclamens.
Wallflowers.
Stocks.
Cytisus.
Calceolarias.
Ardisia carnata; red berries.

EXTRAORDINARY PRODUCE OF AN APRICOT-TREE IN GUERNSEY.—An apricot-tree, belonging to Mrs. Allez, of Hauteville, has for many years past given a produce which would be incredible if the fact were not notorious. In the year 1855, this tree yielded no less than 16,000 apricots, and, this year, the produce has been at least 10,000 full-sized and perfectly ripened apricots. The tree (which is, we believe, upwards of forty years old) measures twenty feet in height, and has a span of sixty feet, thus covering a surface of 1,200 feet.—*London Cottage Gardener.*

BASKETS FOR FORWARDING CONIFERS, ETC.—The growing of such plants in baskets instead of pots is not a new idea, but it is a good one, as (provided the basket is of some size) the plants can have all the advantage of house room in their young state, and, when desired, can be planted out, basket and all, without the roots being matted into a ball, or somewhat injured by disentangling them, so likely to be the result when plants are continued any time in pots.

FEATHERS.—The poultry fanciers are endeavoring to classify feathers, and give the following descriptions, among a host of others: "A *laced* feather has a narrow border all round its edge, differing in color from the ground color of the feather, but no moon on the tip. A *spangled* feather has a moon on the tip, differing from the ground color of the feather, but no border round this. A *pencilled* feather has dark bars in parallel lines across the lighter ground color of the feather. There is neither a spangle at its tip, nor a border round its edge."

Notes for the Month.

FEBRUARY.

VINEYARD CALENDAR.

BY R. BUCHANAN, CINCINNATI, OHIO.

In moderate and dry weather, pruning the vines may be continued throughout this month. In the South, it should be finished. Here, we have nearly a month longer to prune, for the sap in the vine seldom rises before the latter end of March. If it does, we are in danger of frosts nipping the young shoots late in April, or early in May. The method of pruning was stated in the "Calendar" for March last, and also for December, and it is therefore unnecessary to repeat it now. The treatment of the wine after it is racked off, will be the same as recommended last month: "Keep the casks full, and the bungs tight."

Should new plantings be required, this will be a good month to prepare the ground, either by trenching with the spade, or subsoil ploughing. The latter, if done thoroughly, by deep furrows, and then cross-ploughing, is much the cheapest, and, in moderately light soils, will answer nearly as well as trenching.

Cuttings intended for planting in the new vineyard, should be buried in the earth until wanted to set out. New stakes should be charred at the lower end, or coated with coal-tar, to make them last longer in the ground. The careful vine-dresser may also find other jobs to do now that will relieve the pressure of work thrown upon him by the opening of spring.

N. B.—In the "Calendar" for March last, "buds" was printed for *butts*, in cuttings, and "roots" for *frost*, in treating of layers.

BY WILLIAM SAUNDERS.

MANURING (Gurneyism).—This term (occasionally met with in agricultural writings) has been applied to a kind of manuring adopted by a Mr. Gurney, in England. The operation consists in covering grass land with straw, coarse hay, or other fibrous matter, under which the grass springs up with astonishing rapidity. A similar practice has for some time been commented upon here as "fall manuring." It has been long observed, that where soil has been covered for a time, it has enriched itself. This has been explained on the supposition that the water of the subsoil, in its upward passage, by capillary attraction, to supply surface evaporation, having in solution various mineral salts, is arrested in its upward progress by a colder substance, where it is condensed, and the mineral ingredients are retained in the surface soil, in a condition immediately available for future vegetation. It would seem, therefore, that the beneficial effects of spreading manure on the surface, and leaving it uncovered, do not proceed so much from the enriching qualities of the manure as from its effects as a simple covering. This is, no doubt, the true solution of the question, for it cannot be doubted that much of the essential properties of manure must be lost by exposure and evaporation. While, therefore, it does not by any means prove that the best method of applying manure is to spread it on the surface, and leave it exposed for months, it is an additional proof of the great utility of mulching; and the principle is a valuable one to

gardeners and fruit cultivators, since it is inexpedient to disturb the soil, and incorporate manure with many of their crops. We learn, further, that when we cover strawberry plants over, the roots of raspberries, fruit-trees, &c., we not only protect from cold, but enhance the productive capacity of the soil, whether the covering be shavings, saw-dust, tan bark, charcoal dust, straw, or farm-yard manure.

FORCING FRUITS.—The system of growing grape-vines, and other fruits, in pots and tubs, for early forced crops, presents many advantages over the old method of fruiting plants permanently set out in the soil. The roots are thus equally under the control of the operator, and a uniform and successful crop can with more certainty be insured.

The "Golden Rule" in forcing is *never to be in a hurry*, and to endeavor to imitate somewhat the fluctuations of the external atmosphere; especially allow a reasonable fall of the temperature in the absence of light; the night temperature should fall from 15° to 20° below that of the day in clear, sunny weather. Many failures in forcing are caused by high night temperature, and a mistaken eagerness to keep plants in an artificial instead of a natural condition.

Strawberry plants potted in the fall, will fruit well in a greenhouse, if placed on a shelf near the glass. The hermaphrodite varieties succeed best, as the pistillate do not set freely unless artificially impregnated. Much has of late been written on the subject of sexes in strawberries, but very little of any practical value. It is perfectly in accordance with the teachings of vegetable physiology that single and double, or perfect and imperfect, flowers may be produced on the same plant. The production of wood buds or flower buds is also within the power of the skilled cultivator. Under shelter of these well known botanical laws, assertions have been made that the inconstancy of the strawberry is so great as to render all distinction of sexes worthless. This assertion is simply absurd, as all practical cultivators well know; and it is equally absurd to maintain that changes are impossible.

GRAFTING GRAPES.—The introduction of new and improved varieties of fruits has of late been so great that there are few persons so well supplied with really excellent kinds, that it will not be to their interest to add to their stock. Those who have a superabundance of Catawba or Isabella Grape-vines, will not regret cutting them down and grafting Diana, Delaware, or the Rebecca, on the stock. By doing so, they will obtain strong fruiting plants after one year's growth. The scions should be secured at once, and preserved in a cool, damp cellar; if a dry cellar, they can be kept in a damp mat, or moistened straw. The object is to keep them from growing until the stock puts forth leaves, when it is cut down, and the scions inserted at once. Cleft grafting is the most simple for grapes, and if the stock is cut low enough to cover the graft with soil, failures will rarely occur.

Greenhouse plants should always be watered in the early portion of the day. In cold weather, early watering allows excess of moisture to evaporate before evening, and the house will better resist cold. Again: In summer, early watering charges the atmosphere with moisture, and the temperature is kept cool and healthful during the day. A more important reason for the practice arises from the fact that the water, and substances it holds in solution, absorbed by plants during the night, is given off again by their leaves, without benefiting the plant. The leaves must be exposed to the action of light, before the carbonic acid and other matters are decomposed. Light is necessary to the performance of those chemical actions which digest and retain the substances required to develop and extend the plant structure. The amount of water given off by the leaves at night, will of course be altogether dependent upon the hygrometric state of the atmosphere.

SHRUBBERIES.—In arranging pleasure grounds and shrubbery plantations, more especially when the space is of small extent, errors are frequently committed in planting too thickly of the largest growing trees, and however pleasing and effective these may appear while they are young, as they grow up the lower limbs decay, and the plantations present a very artificial appearance. A portion of medium-sized growing trees, judiciously distributed along the margin, and here and there in groups, will eventually give a pleasing and natural looking outline. The following list contains a few of the more available trees of this character: *Halesia tetrapetala* and *H. diptera*, *Anona triloba*, *Cornus florida* and *sanguinea*, *Euonymus latifolia*, *Amelanchier botriapium*, *Gordonia pubescens*, *Ptelea trifoliata*, *Rhus cotinus*, *Chionanthus Virginica*, *Rhamnus catharticus*, *Viburnum prunifolia*, *Kölnreuteria paniculata*, *Shepherdia argentea*, *Elaeagnus angustifolia*, *Cercis canadensis*, *Cytisus laburnum*, *Tamarisk Gallica*, *Syringa vulgaris*, *Magnolia glauca*, *M. conspicua*, *Viburnum opulus*, *Acer Pennsylvanica*, *Carpinus Americana*, *Celtis occidentalis*, *Mimosa Julibrissin*, *Laurus sassafras*, and *Maclura aurantiacum*. If you wish to trim or torture a plant into shapes, the latter is so rapid a grower that you may have large columns, pyramids, &c. &c., in a very short time.



A. GROUP OF SUMMER FRUIT

1 Rostiezer 2. Madelaine 3. Beurre Giffard 4. Mannings Elisabeth 5. Bloodgood,
6. Dearborn 7. B. Haggensten (or Limon.)

Economics. Heating and Cooking. Bells and Whistles. A Wine Cellar. Ice Houses. Water Rams, &c. &c.



HE improvements one sees in household conveniences of various kinds now-a-days, are numerous and important. Considerable inspection of the various departments of living economy, of late, induces us to name a few, which may not be new to many readers, but to others may prove suggestive.

Heating Houses.—The length of time that has elapsed since the general introduction of coal has been so considerable, that it is astonishing so little economy has been studied in saving fuel, and employing the whole, or a greater part of the heat which is elicited in the operation of warming houses. An obvious improvement on the plan of heating dwellings we see now in frequent practice. There is much of the early fall and spring season when a little fire is necessary; those who have but one large furnace or heater, put it into operation, and ten to one the consumption of fuel is twice what it need be. To obviate this great objection, *two* furnaces are now successfully built, each of small dimensions, and alongside of each other. In moderate weather one is lighted; as soon as the cold requires, both are put into blast, the two consuming only the quantity of coal required for one, on the old plan. This is a great saving of fuel, and its economy is at once obvious.*

There can be little doubt that these furnaces make terrible inroads on our pockets. Very commonly, the major part of the heat escapes through the chimney to which it is conveyed by the pipe that carries off the gas of combustion. In every furnace built, care should be taken to save as much of this heat as is possible. To this end, the gas pipe should be carried up through the body of the house, encased as the French encase their stoves, or in some other material, such as a thin plastered wall, with openings and a draft through it. This method will sufficiently warm a hall, entry, or chamber, while in too many cases the gas is carried to an outside chimney, where, at the exit, there is constantly a stream of heat escaping, sufficient, day and night, to roast a ham; this should have been passed through drums, and a large part of it saved. As coal is now employed, it is a dearer fuel than wood in former times. True, we have more comfortable houses for our money, but the best plan of heating is yet to be invented; considering its importance, there is probably no field for inventors so vacant, and so likely to be attended with great profits.

Go into the thousands of good houses in and around our great cities; the cellar is sure to exhibit an enormous furnace blazing away the whole twenty-four hours. The cook has her range full of coal night and day; a stove or two in chambers, and probably grates in the drawing and dining rooms, are also regularly replenished. Now there is no good reason can be given why the furnace should not do

* This reminds us to say that where a very extensive range of propagating, or green-houses, are heated by a large boiler, it is a matter of prudence to have a duplicate placed close beside, ready to be worked, if any accident should happen to the other. The expense of a second boiler would be a small percentage for security, and would soon be more than paid in the saving of the heat, which would then escape from only one chimney, instead of many, when in large establishments a separate furnace is used for every house, or two or three houses.

the cooking quite as well, if not better, than the modern expensive range. Why not unite them? The smell of the dinner will be urged as an objection on first impression, but it is utterly futile, for the odor of the cellar itself is not allowed to ascend, the air-chamber being connected with the open air, or should be entirely so. A contrivance, simple and yet effective for this purpose, is yet a desideratum in most neighborhoods, and would largely reward an ingenious man.

As regards the little cooking required in summer for tea and breakfast, economical people who can obtain it, now employ gas, which boils the tea-kettle, toasts or cooks a steak as well, if not better, than a huge coal fire; yet how very few have yet adopted this obvious improvement and economy. The same jet should heat the sad-irons, and perhaps the water for washing.

Bells and Whistles.—Convenience should be studied in every department, though we would deprecate the fussy interference which makes a toil of comfort. We have seen in many mansions a bell for the dining-room, that it may be as well to mention, as suited to every family. A piston of simple construction is placed in the floor where the master or mistress sits at meals; touching this by the foot, rings a bell in the kitchen, to hasten or call attendance. The only drawback is that the table must always be in nearly the same situation, but this is not a serious objection, as there it usually is.

Numerous bells in the kitchen confuse new-comers, and that is a numerous class, we regret to say, in this country. To insure attention to the up-stairs apartment, a bell is usually rung, before speaking your wants through a tube leading to the servants' apartment below. This confusion is now abated by blowing through a small tube, and a whistle in the kitchen cannot be mistaken in its object.

A Wine Cellar.—Some cleverly particular people may be glad to learn the best way of having their wine cellar, so that, while it is convenient, and at hand, it is always under the eye of the owner, when opened. To this end, a door is concealed in the floor of the dining-room, and is quite invisible when not in use. The lock has a well fitted brass cover, on a level with, or rather, sunk in the floor. The door should rise and be so hung by weights, as to remain in any position it is placed. Stairs lead to a wine cellar or closet beneath, to which this is the only access. The wine is brought up under your own direction and inspection, and the key returned to the person that expended the money for the purchase of the beverage. This is an obvious improvement, and may be adopted in dwellings already built, as well as in those in course of erection.

Ice-houses should be in communication with the kitchen, divided from it by double doors, or a passage. The food, milk, &c., should be beneath the ice, or in a chamber surrounded by it. In such a receptacle, perishable fruit may be kept a long time without injury, and meat will be perfectly good after many days. The water from the melting ice should be conducted to a drain near by.

Water Rams.—The extra water thrown up by rams is generally wasted, but a good contriver will make it useful for irrigating his garden, through which it may be conducted with scarcely any cost, by having a narrow board with low sides—as already described—that will move here and there, and while they stop the water, open at the same time an egress for it where it is wanted, say on a strawberry bed; complete irrigation may be practised, without any perceptible loss of time.

These hints should not be thrown away, and though they may seem little to great minds, life is short enough to make it an object to economize time and labor. In neighborhoods where much building is going on, such improvements may be well known, but there must be places where one or more of them has not penetrated.

ON THE CULTIVATION OF MOUTANS.

Few flowers have been the victims of more extraordinary caprice than these most splendid ornaments of our gardens. Long known by report and Chinese drawings, their beauty was disbelieved, till at length, some seventy years ago, the first individual of the genus made its appearance in Europe. Its hardihood once established, it bore a high price, and was the pride of the most notable horticulturists. Some twenty years later arrived another variety, *P. Moutan papaveracea*, which was equally and justly cherished.

Still the Chinese reports of Moutans of various colors were treated with incredulity, those already received being obviously very similar in color, differing, in fact, little more than double and single varieties of the same plant might be expected to do. When China was opened to our researches, no plants were looked for with greater curiosity than the almost fabulous Moutans. At last, but not till even his patience had experienced some trial and disappointment, Robert Fortune saw, verified, and secured the many colored Moutans which Chinese papers, seventy or eighty years before, had faithfully depicted to our incredulous eyes. The lilacs, the salmon-colored, the sulphur-colored, the whites, the rich reds, were secured, transmitted to England, and in due time met our astonished eyes. But where are they now? and in how many gardens are they to be seen? To watchful eyes they displayed their beauties imperfectly at Chiswick; still more imperfectly, I suspect, at Standish & Noble's, at Bagshot, for on visiting them (a little too late in the season, I must allow) they showed sorry remnants of indifferent flowers.

Nevertheless there exist few flowers which can at all compete with them in beauty. They may occasionally be seen in favorable situations with from one hundred to three hundred flowers upon them open at once, each seven to nine inches in diameter. I speak, of course, of the old varieties, as no large plants of the new ones yet exist, though there is not the slightest reason why they should not, except ignorance and carelessness.

A great admirer myself of Moutans, I wish to incite others to cultivate them, and therefore gladly detail my experience of their growth.

The first and great mistake is to imagine they like a light soil. No soil is too strong for them, provided it is well drained and well manured. The soil which will grow hops, wheat, beans, or melons is the only soil in which they attain perfection. Of manure they are perfect gluttons. I give moderate-sized plants a bushel of sheep dung per annum as a top-dressing, when I wish to have them in perfection. They moreover require a good deal of judicious pruning. If the branches are allowed to get too thick, small flowers are the consequence, and they will dwindle at last on old plants till they are little bigger than Gum-Cistus flowers. I have seen some of the earliest propagated plants of *P. papaveracea*, now upwards of forty years old, which, although large plants, present but a shabby appearance, and produce miserably small flowers.

Plants from four to five feet in diameter, when out of leaf, are large enough for all ordinary purposes; these will be between seven and eight feet in diameter when in flower, and produce from one hundred to one hundred and twenty flowers, and they may be grown to this size and well furnished in about six or seven years. I find that the ripened shoots with me vary from six to ten inches in length, eight being the ordinary growth.

I have never known the shoots injured by spring frosts but once in the last twelve years. Whenever that is the case, they should be immediately cut back

to the first unopened bud, which will grow and flower, though the flowers thus produced are rather smaller than those produced by the first growth. However, as a preventive against this accident, I watch the Moutans in the early spring, and if I find the fruit buds getting so forward as to run risk of injury, I prune them all off, cutting the plant back to the second or even the third bud. This insures a safe bloom a little later than the natural season.

Apart from this pruning, I generally cut the plants back very much, as Black Currants are pruned, immediately upon the fall of the leaf, leaving from four to six inches of wood, according to the desired size of the plant; but in this pruning regard must be had in unfavorable situations to the possible necessity of a second pruning.

With respect to situation, it must be confessed that all the low grounds of the valley of London are unfavorable to this plant. At Hampstead or Norwood, or, in fact, on any rising ground where vegetation is somewhat retarded, it will be found in greatest beauty. Light soils are unfavorable to it, especially sandy peat. It appears to do best in an open airy situation, sheltered from violent wind, and not exposed to extreme sun; the north side of a dwarf wall suits it perfectly. It should never receive any protection, except an awning when in flower, which will tend to prolong its beauty; but I must confess I prefer it perfectly exposed.

Many of the new varieties have flowered with me; all appear quite as hardy as the old ones, but there is some difference in their earliness, and, as far as I can at present judge, great difference in their habits of growth. Some appear much more compact and dwarf than the old varieties, whilst some, on the contrary, appear to be much more erect, and probably of larger growth.

Nothing would be more gorgeous than a Moutan garden, in which beds of about four feet square were devoted to each single plant. Even when out of flower, few plants surpass them in beauty and foliage.—J. R., in *Gardener's Chronicle*.

RIVERS'S ROSE AMATEUR'S GUIDE.

WE gladly welcome the new issue of this very useful and now famous guide. The continual changes that take place in public taste, the ever altering claims of varieties to general favor, the capital, the worthless, the useless new sorts, the results of experience in cultivation itself and many other matters most interesting to the grower, require as much vigilant attention and careful pruning as a first class rose-bush itself. We are glad to see that Mr. Rivers has used his editorial hoe to some purpose by weeding out weeds, and well stirring the ground about the sterling varieties; nor has he been less attentive to rendering his instructions so clear and precise, that even those who run may read. There is a good deal of novelty about roses in pots, and much useful information concerning stocks, the most debatable and perhaps least satisfactory question that the rose grower has to consider. That the eternal Dog Rose is a very bad stock for some kinds is undeniable, as rose buyers know to their cost. But what is there better? Upon this point Mr. Rivers writes as follows:—

"The Celine stock, a very old hybrid Bourbon rose, is a most excellent stock for Bourbon, Noisette (particularly the Cloth of Gold), and many other roses; if planted in a rich, moist soil, it will make shoots from four to five feet in height, fit for low standards.

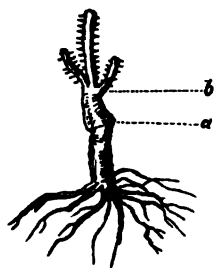
"The Rosa Manetti is a rose I received some twenty years since from Como, from Signor Crivelli, who recommended it as the very best of all roses for a stock. It was raised from seed by Signor Manetti, of the Botanic Garden at Monza.

All the roses I have budded on this stock have succeeded admirably; above all the Hybrid Perpetuals, which scarcely seem to know when to leave off growing and blooming in the autumn; indeed it is remarkable for its late growth, for it may be budded during the whole of September. Another excellent quality is, that it never gives any suckers from its roots at long distances from the plant, like the Dog Rose. It seems to flourish equally in light and dry as well as in stiff soils; and it will, I trust, be of much value to the rose amateur, who, if the soil of his rose garden be light and dry, is so often troubled with the numerous suckers thrown up by the Dog Rose. I am, indeed, now fully convinced that the only method of cultivating dwarf hybrid perpetual roses in soils that are gravelly, sandy, or resting on chalk, is to employ the Manetti Rose as a stock.

"Since the above paragraphs were written, more experience with this has been gained. Although so vigorous in growth, it does not form good standards; the stems with their side branches left on increase rapidly in bulk, but when they are budded at the height proper for standards, and the side branches cut off, the bark becomes indurated, the sap apparently ceases to circulate freely, and the stems in a year or two shrink, and the head becomes stunted in its growth and unhealthy.

"Some of the vigorous growing hybrid China roses make good half-standards on this stock, but its great eligibility is for dwarfs; these should be budded close to the ground, and, when transplanted from the nursery, should be planted so as to cover the junction of the bud with the stock, placing that part about one inch and a half or two inches below the surface of the border.

"The annexed figure will illustrate my meaning better than a host of words: α , junction of the bud with the stock; δ , the height to which the stem should be covered with earth. Treated in this way the covered part of the stock increases rapidly in bulk, the sap flows freely through it, and most vigorous and healthy growth is the result. I have observed a peculiarity in this stock worthy of notice; under certain circumstances the sort budded on it will entirely overpower its suckers, so that in a year or two the plant from the bud will gain the ascendancy, and the suckers, without being removed, will languish and die. This has occurred here in several instances with stocks planted out, for stocks for propagation, in a stiff clayey soil; some of these had dormant buds in them, which had not put forth their shoots with the usual crop of plants, and were thrown on one side as stocks. Now the curious part of the matter was, that immediately these stocks were planted out for stocks in a stiff soil, and so deeply that the dormant buds became slightly colored with earth, they pushed forth most vigorously; and, although the stocks at the same time put forth suckers which were suffered to grow, they have, as may be seen now in most instances, overpowered them, and now form vigorous bushes of hybrid perpetual roses, from three to six years old.



"To what a great extent in this respect it differs from the Dog Rose stock will be at once apparent to rose-loving readers; for we all know that the Dog Rose carries on a fierce war with its bud in graft, and, unless most carefully attended to, destroys it by its suckers in one season. A method of growing standard roses in dry, unfavorable soils, with the aid of the Manetti stock, may be practised by those who really love rose culture; some robust-growing, hybrid China roses—Madame Pisaroni and Duc Decazes are two vigorous growing varieties—should be budded on strong Manetti stocks below the surface of the

soil, which should be removed for the purpose; from each bud one shoot should be encouraged and supported with a stake, and all others carefully removed. The second season of growth the stems thus formed may be budded with hybrid perpetual roses and others; they soon form nice healthy stems."

A PLANT CABINET.

A "PLANT CABINET," while it scarcely aspires to the dignity of a conservatory, possesses the attractions of one, and gives the family of the possessor as much pleasure as a more expensive arrangement.

A bay-window, in one of the most frequented rooms, suggested itself as a suitable place for bringing the plants as they bloomed, from a small green-house too distant from the dwelling to be visited in bad weather.

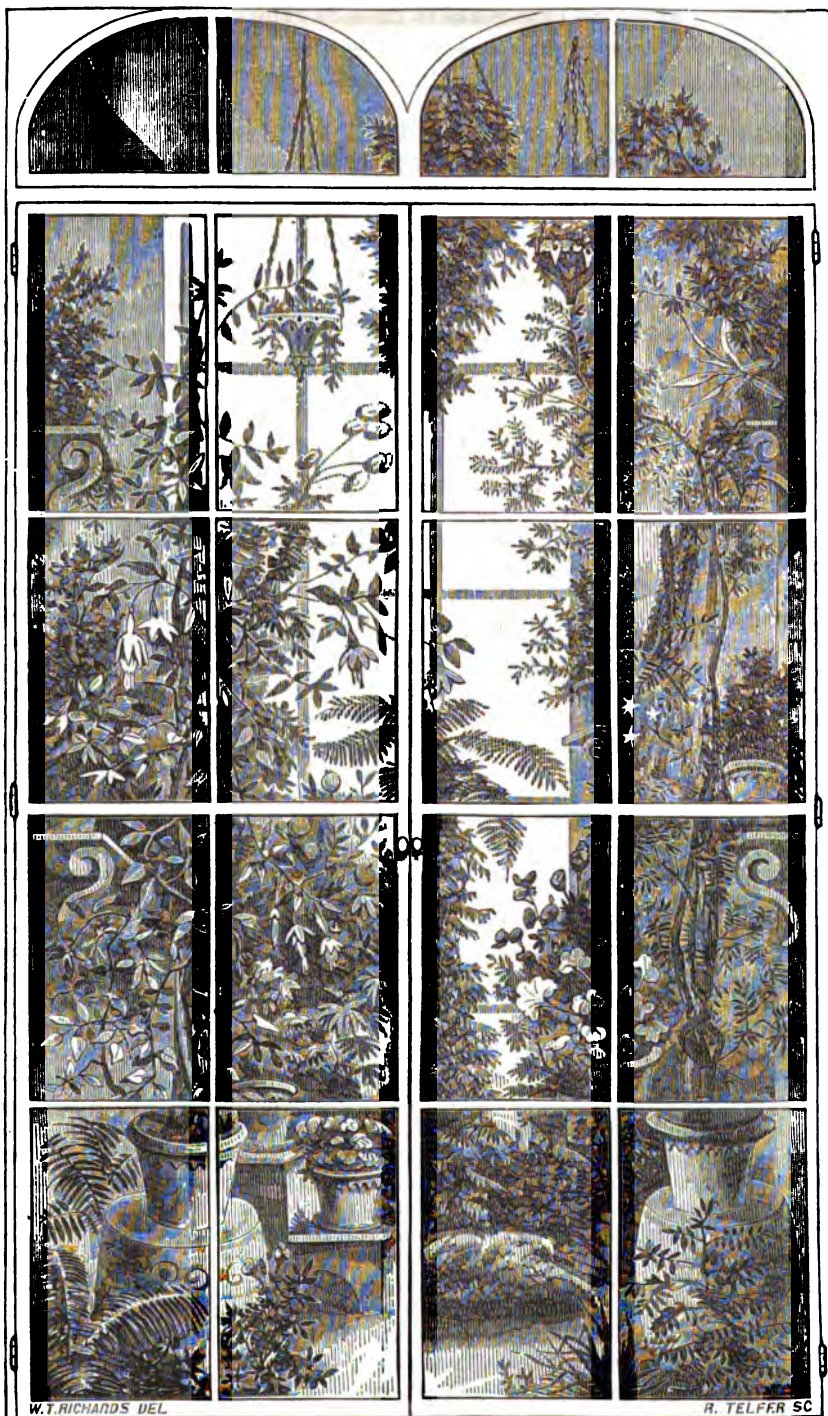
Simple glass sashes to fit the opening were procured; they open like a double door; shelves on one side support the plants, and small wooden brackets screwed on to the walls here and there, assist to furnish this little jewel of beauty. In the centre is an ornamental post, of red cedar varnished, up which climbs two different colored *Maurandia Barclayanas*, and the top is ornamented with a golden fern. In front are seen two China seats; on these are placed ornamental long-stemmed climbing plants, and hanging vases assist materially in the effect. During winter the cabinet is gay with the finest camellias and other flowers. *Chrysanthemums*, at the proper season, give it their peculiar attractions. In short, there are few plants that are not exhibited in succession; even orchideous, and other tender varieties, are introduced with success. In extremely cold weather the door is left a little ajar to admit the warmth of the room, especially at night, and the thermometer has not yet fallen below 45°.

The whole cost of fitting up this beautiful case, exclusive of the flowering plants, did not exceed twenty-five dollars. It gives completeness and beauty, and an expression to the house that could be produced in no other mode so cheaply. But it has a higher object; it embues all connected with the mansion with a love of flowers, and gratifies many senses. A pair of Canary birds are sometimes let out of their cages to enjoy the liberty of the cabinet.

Cowper, in his happiest manner, has alluded thus to the love of Nature's works:—

"The love of Nature's works
Is an ingredient in the compound, man,
Infused at the creation of the kind.
And, though th' Almighty Maker has throughout
Discriminated each from each, by strokes
And touches of his hand, with so much art
Diversified, that two were never found
Twins at all points—yet this obtains in all,
That all discern a beauty in his works,
And all can taste them."

By introducing such a cabinet into a sitting-room, the beauties of nature are made accessible in the severest season. There would be no necessity of having a green-house to resort to, to fill such a case; without leaving their comfortably warmed rooms, ladies can attend to their pets, which by employing water in dishes for the sake of the evaporation, will possess as healthy an atmosphere as the gardener's case. As much light as possible should be given. The cactus tribe would thrive here remarkably well.



W.T. RICHARDS DEL.

R. TELFER SC.

REMOVING PEAR-TREES TO PROMOTE FRUITFULNESS—MR. RIVERS AND THE BELGIAN PEAR SCHOOL, &c. &c.

BY L. B., NEW JERSEY.

MR. EDITOR: You called my attention to the notice of Rivers' catalogue contained in the *Gardener's Chronicle*. Mr. Rivers is a very experienced pomologist, and his information is indeed useful, the more so, because also *practical*. The method of transplanting trees, to bring them into bearing, were recommended by me to my friends, never met with their approval; therefore, I never mentioned it in print; but I beg to avail myself of the remark of Mr. Rivers, to say a few words about it.

In England and Belgium, where the climate is usually damp, and the soil nearly always wet throughout the entire spring, there is no danger in transplanting a thrifty young tree, if the process be done with care; as, for instance, the new hole ready made, and the tree transferred to it with a clump of earth, having most of its roots safe, and then planted with the usual care we bestow upon that delicate process. In this dry and absorbing atmosphere, still more caution is needed, and success is not so certain. But I can show by experience that a tree, chiefly on the quince root, taken up in some part of your grounds, and carefully transferred by wheelbarrow, or handbarrow, to its new place, when the operation is performed on a mild spring day, and the soil being in good order, is in no danger whatever, and that this is, indeed, the *best* of all methods to throw a very thrifty variety into bearing. With pears upon quince root, one transplanting in two years will have the desired effect, almost always the first, and certainly after the second removal. But in no cases should the tree be transferred to a great distance, and the dirt all shaken out. It requires patience to take up the tree, so as to leave part of the earth, at least in the centre of the root's cluster, and the roots uninjured, excepting at their extremities, where the knife must *clean* the broken or smashed parts by a neat diagonal cut. If the tree was, previously to the operation, at a proper depth, it should not be planted any deeper; and the *filling* earth should be mellow and clean, so as to fill easily all interstices. By means of such precautions, I never lost a tree, and have brought many too luxuriant growing varieties, into bearing. It is safer than pinching, as it keeps the tree in better shape, and at once disposes the slow *fruit branches* to mature their incipient buds, which, in some varieties, require three years to become actual *blossoms*.

To the removal "at the end of October," I should have no objection, if the holes have been prepared beforehand, and a mould of mellow earth kept ready on the side of the hole. But, with our severe winters (which is not the case in Great Britain), I always prefer the spring. The operation succeeds as well, and there is no danger from deep freezing, too much moisture, or other drawbacks of no consequence to established trees, but sometimes very injurious to *removed* trees.

A word about his description of pears. He is right in presuming that *Duc d'Orleans* is the same as *Conseille de la cour*; which is the same as *Maréchal de la cour*! how all these mistakes occurred, it would be hard to explain; most of them are the result of the slovenliness and neglect of Ferdinand de Meester, an old invalid, and by no means a temperance man. By his carelessness and inattention, labels have been lost, changed, and transferred to other trees; after Van Mons' death, desirous to please his heirs, he presented them with many *new* varieties,

which he knew to be already named. When Mr. A. Bivort came in possession of Van Mons' seedlings, many trees, among the thousands, had no label nor designation whatever; and being naturally induced to think that these unlabelled trees were *inedited*, he gave names of his own to them, as he had a perfect right to do, not knowing that such trees had already been named *once*, and, as in the case with the Duc d'Orleans, *twice* by others. However, under his careful and skilful management, such mistakes will occur no more. We should undoubtedly have been made acquainted with some new valuable and inedited fruits had its model pear-school not been twice visited by terrible hail-storms in the course of the last two years, which cut down almost every fruit from the promising seedlings.

Prince Albert is evidently of the *Passe Colmar* group, or family, and will, perhaps, not suit our climate, as the offsprings of that group are nearly all inferior to the European standard; so are *Alexandre Lambré*, *Fondante de Noël*, &c., at least as far as tested here. The *Colmar* and the *Passe Colmar* themselves, the heads of the family, never do come up to their European value. But *Prince Albert* is indeed such a fine pyramidal grower, as to be entitled to a fair trial before being discarded.

Let our trees grow older, *more mature*, and we shall undoubtedly obtain better and more steady fruit.

WEIGELIA MIDDENDORFIANA.

BY W. C. STRONG, BRIGHTON, MASS.

I HOLD the *Weigelia*s in great regard, and while I have readily admitted that the *Roseas* and *Coræensis*, or *Amabilis* are perfect, in their way, I have still longed for the *Middendorf*, or *Yellow*. During the last two or three years I have received plants under this name, from different sources in England and France. They have proved in all cases to belong to the family of Bush Honeysuckle, producing small and very insignificant yellow flowers. This variety was discovered in Japan some years ago, and from thence sent to France, and disseminated throughout England. It seems to be very similar, if not identical, with the *Diervilla trifida* of our woods. As I have seen no description of the true *Yellow Weigelia*, I have thought it probable that this *Diervilla* has usurped its place, in this country; and as I now consider myself fortunate in possessing the genuine, I send you a description, which may serve to correct erroneous impressions.

The general habit of the plant and appearance of the foliage is much like *W. Rosea*, the latter being of a lighter green, and less wrinkled than *W. Coræensis*. But the flowers are very distinct and dissimilar. These are produced in clusters of five, upon long stems, thrown well up above the foliage, so as to be very conspicuous. Flowers monopetalous, five-lobed, lobes extending one third down the corolla. In shape, it somewhat resembles the *Mimulus*, being in size about one and a half inch long from the calyx to the tip of the lobes, and from one to one and a half inch in width across the lobes. Color, a clear pale yellow, the centre lobe being mottled and dotted with bright orange. Stamens reaching to the mouth of the bell, and united by their anthers. Pistil still longer, and crowned by a large cap-shaped stigma, five-lobed, answering to each stamen. It appears to be very free flowering, and vigorous in habit.

And now, having this new color, it seems a very easy matter, and almost certain that by hybridizing with the other kinds, a great variety and combination of colors may be obtained. Who will get the first?

CRANBERRY CULTURE.



THE kind most known and best adapted to all kinds of soil, is the Bell variety or Egg shaped, and most cultivated in New England. A round variety raised about Cape Cod is a larger fruit, handsome, and only grows on very wet, marshy land, and not as well adapted to general culture; there are also several other varieties which mature late, larger fruit than the Bell variety, but not as productive. They can be propagated from the seed, or from cuttings or by transplanting. The last method is most frequently adopted. The first crop obtained by planting the seed will be one or two years later than that produced by transplanting. When cultivated, the berries are

large and abundant; after being gathered, they turn from light scarlet to deep red, and sometimes almost black. They will keep a very long time if not gathered too early—they should remain on the vines until it is necessary to gather them from the frost—they should be properly dried by spreading them thin for three or four weeks; they can then be packed and sent to any part of the world. If gathered too early, while some of the berries are green, they will not keep.

The soil most suitable for their growth is low, moist meadow land that is not too cold and spongy. In that case, a drain should be cut to let off surplus water, which should always be within twelve inches of the surface, and sand covered over the top three or four inches will be of service, although not indispensable where it is not easily procured. When the ground is uneven, sand can be carted on to level it. They also do well on muck or any poor swampy land, where nothing else will grow; they grow naturally on watery bogs and marshes—on the border of streams and ditches, and by draining wet land and then taking off the top of the ground to remove the wild grass or vegetable matter and carry to the manure heap; then cart on beach or other sand to the depth of two or three inches to level the ground and to prevent grass and weeds from choking the vines, and to keep the ground loose around the plant. They bear abundantly on marshes covered with coarse sand, entirely destitute of organic matter of any kind, but accessible to moisture—on pure peat covered with sand, and on every variety of soil, except clay liable to bake or become hard in dry weather, on soil that can be worked with a plough and harrow; it can be prepared as you would do it for planting out garden and other plants; sometimes it can be burnt over, so as to get it in a condition to set out the plants. They can also be raised on moist loam where corn and potatoes will grow, but not so abundantly on dry or sandy soil unless covered two or three inches with muck or spent tan. No animal or vegetable manure should be used, as the fruit draws most of its moisture from the atmosphere. The poorer the soil, the less cultivation is needed.

If you have a peat swamp and design converting it into a cranberry yard, your first step to be taken is to find a level that is not too wet, and then clear off the turf or grass sods, and bring the rest of the swamp to the same height. When it is thus cleared and levelled off, it is not then ready for the reception of the vine.

Should the vine be planted, it will do well through the winter and spring, but in the hottest weather the peat will bake and become hard; it will therefore be impossible to take in the moisture of the atmosphere, which is absolutely required by the vine. The absence of this moisture will cause the plant to die, and thus both labor and money are lost. This will be prevented by leaving the prepared swamp exposed to the action of the frost for one winter, when it will, after it is thawed, crumble and present a light gravelly appearance, the largest lump of which will not exceed an ordinary pebble. When the swamp has thus been treated, it will not afterwards bake and become hard; its surface will be light and porous.

When vines are planted, it is often the case that in the summer following they will appear as though they were dead; and the cultivator, having this impression on his mind, will take them up, believing that it is impracticable on his soil to raise any fruit.

The plant is very tenacious of life, and if there is but half a chance it will take hold and live, though it may not yield much fruit. These vines should not have been taken up, for it is evident that their natural stunted appearance was mistaken for death. They ought to have remained in the soil at least another year, when it could have been fully determined whether they were living or dead.

The Bell Cranberry is that which is mostly desired by cultivators, but even experienced men are often at a loss to distinguish the vine on which it grows from the Bugle or the Cherry. If found in the middle of a swamp in its wild state it will invariably throw off the runner toward the driest part of the bog. Hence it is found on the edges most frequently. When it is transplanted and brought under cultivation, it is true to the same law, and will send its suckers up the banks of the yard, and these will yield well. The inference drawn from this is, that it can be cultivated on upland soils adapted to its wants, even should it not be overflowed, and is therefore best adapted for general cultivation. Lay out the grounds as you would for setting out cabbage, strawberry or other plants—have a pointed stick or dibble, and make a hole for the plant—have the roots immersed in muddy water so thick as to adhere to the root—place it in the hole from three to four inches under ground, and press the dirt very closely around it. To have the rows uniform, draw a line and put the plants, 18 by 20 inches, in rows—where small patches are desired which can be kept clean with a hoe; the nearer they are together, the quicker they cover the ground—but where acres are planted it will save much labor by putting them 2 to 2½ feet apart, then a plough or harrow can be used to keep out the grass and weeds. After one or two years' cultivation to keep out the grass, they will take care of themselves. At 18 inches apart, it will take 19,000 plants; 2 feet 10,000; 2½ feet, 7,000 plants to the acre. They can be planted out in the fall at the North from September until the ground freezes, or in the spring until the middle or last of May. At the South and West, if possible, they should be planted out in autumn and December; if received too late for planting out, the roots can be covered with dirt in a box or in a cellar (but not in the ground out of door) until early in spring. As it is often late before we can start the plants, and the great press of freight often delays them beyond a desirable time, if not ordered in the fall, they will always be forwarded as early as possible in the spring. The transportation of 10,000 plants to Chicago, Cincinnati or Harrisburg will be about \$2—1,000 to 5,000 plants, from \$1 to \$1.50. Where land for Cranberry culture can be overflowed (which is by no means necessary), fall is the best time to plant them out, but where there is no overflow, I am satisfied that they can be planted out in early spring as well as fall. Every family can have their garden patch in that case, and in dryish soil grass, meadow muck or tan around the plant will be beneficial

to retain the moisture. They are highly ornamental in pots—the fruit hanging on the plants until the blossom appears for the next crop. The first year they often bear 50 bushels to the acre, and increase every year, until sometimes they bear from 200 to 300 bushels per acre, perhaps the net average is from 100 to 150 bushels per acre. They usually bring from \$3 to \$4 per bushel—never less than \$2—this year they are worth from \$4 to \$6 per bushel. Cultivated fruit is less likely to be affected with drought than wild fruit. One man with a rake made for the purpose will gather from thirty to forty bushels a day, with a boy to pick up the scattering ones.

Any information wanted further than is given above, will be furnished on application by letter—and orders for plants will be promptly attended to, and packed in moss so as to forward them safely to any part of the Union.

PRICES.—Under 500 plants, 50 cents per hundred; under 5,000 40 cents per hundred; over 5,000, 30 cents per hundred; over 10,000, \$25 per thousand. Dealers supplied at a discount. F. TROWBRIDGE, *New Haven, Conn.*

[The cultivation of the Cranberry is so important an item in the history of horticulture that we have requested liberty from Mr. Trowbridge to publish his lucid account. We recommend this fruit to the attention of our readers, as one of the most profitable articles that can be planted, and the cultivation of which promises, from the regular demand and high prices, to be permanent. We answer in this way several queries that have been put; as a parlor or green-house plant, the Cranberry is highly ornamental.—ED.]

PREPARING SOIL FOR PLANTING.

BY CINCINNATUS.

DEAR SIR: I am quite an admirer of your monthly calendar of operations, and hope you will not quarrel with me for saying that I consider it the very best part of your work. I think, however, that a little more care exercised in its compilation or composition would aid the credit of its author, and increase its already extensive usefulness. I would not have it supposed that I make these remarks in any carping spirit; the errors that we occasionally see committed, are evidently the result of haste, which the writer himself would I am sure observe if a little more care were bestowed on his efforts. It struck me that as a new year was about to commence, it would be a good time to make the suggestion, which I am sure will be received in the spirit in which it is offered.

As an instance of what I refer to, a recent calendar taught that fall planting was much to be preferred; but that unless it was performed early it was objectionable—all of which I consider very orthodox. In the November No. we have the idea continued: "Trees may yet be planted in sheltered situations," but "the ground must be thoroughly prepared." "To prepare the ground the practice is much commended to prepare the holes now, throwing out the soil and leaving it exposed to be acted on by frosts; by that means it will obtain a friability not otherwise easily obtained." The writer must admit that waiting for the frost to mellow the soil, is an ill method of effecting early fall planting. Even as a preparation for spring planting I should be disposed to join issue, and take my position on the ground of its being all moonshine; it has the shadow of rationality in its favor, but little if anything more. Formerly, great stress was placed on the necessity of summer fallowing and winter freezing in preparing the soil for the service of the husbandman; but these ideas are now pretty generally laid aside as

relics of the barbaric age of agriculture. In the case of light soils fall ploughing is universally considered by our most scientifically practical agriculturists, as positively injurious. In very stiff or wet soils the practice of fall ploughing continued longer in favor, until it was found that such soil so treated, was heavier in summer, when lightness and friability were much needed, than the same soil ploughed in spring. This led to investigation of the causes, and it was discovered that the frost—the power that disintegrated the soil, and, for the time being, rendered it friable—also decomposed the numerous vegetable fibres, roots of weeds, and past crops; and thus had an injurious influence on that summer friability of much greater importance. But the more modern, and as I think more accurate conclusion is, that all such treatment of soils is mere cobbling, and unworthy of our age. If gentlemen wish to render soils friable, they now do it firstly by draining, then by adding silicious and vegetable substances. Depend upon it, if you are about to plant a tree in a soil, which frost will have a beneficial effect on in the way of rendering it friable, you had better not plant it. In such a soil, first get it drained, then go to the nearest woods and get a wheelbarrowful of decayed leaves, and to the public road for a barrow of well washed sand to mix with your stiff soil, then you may go ahead without hesitation. The mechanical constitution of the soil is a matter of first importance, and in such an affair as tree planting should be performed in a thorough and lasting manner. Turning it up to freeze is but a very temporary affair at the best, and unworthy of being considered a commendable practice.

I have chosen this subject to remark on, because I think the recommendation of your correspondent in this case, shows less of that haste to which I frequently refer what I deem errors in his advice. I remember with what hesitation our hard-fisted gardeners received his recommendation to banish the rake from their collection of tools, because raking soils fine made it bake in dry weather. They very justly thought that soils that were of a nature to bake when finely raked, would bake nevertheless, no matter in how rough a state the soil might be left after cropping; and that the proper mode of procedure would be rather to ameliorate the soil, than to take revenge on the harmless implement.

SOME THOUGHTS ON PEAR CULTURE.

BY WILLIAM BACON, RICHMOND, MASS.

ALTHOUGH the culture of the pear on the quince is gradually extending, and though, under favorable circumstances, each year brings new evidence of its practicability, the cry with many still is, "it never will succeed." If the trees do well for a few years, they will be so small they never can produce much, and in a few years will soon die off.

In my early days, tree planting was a hobby with me, and I rode it until the highway through the ancestral premises was well lined by trees of different species; and when the work was done, I regretted that there was no more territory to occupy, because the trees of the wood were not all represented in our home-made avenue. How often was I told then that our labor was vanity; that my trees would not live, or, if they did, they would never come to any size in my day. In part, the prediction was verified. Through my boyish inexperience (no other cause whatever), a few of them died; with the fall of the leaf, however, their places were supplied, so that soon every niche was fully and beautifully occupied. Now these trees are tall and stately. Youth would call them old trees;

they are admired by all. Many a traveller, on a sultry day, has found them a blessing. When the tempest roars, and the storm beats down, they are a protection to the adjoining lands; but those far-seeing economists that folded their hands, and pitied my folly, and warned me by their kind counsels, when, with toil and sweat, I planted out these trees, have no such beautiful creations of their own to look upon. No; "I wish I had such rows of trees, and if I had known I would have planted." Now, is it altogether improbable that similar results will yet show themselves in the matter of dwarf pear culture?

The winter of 1856-7, taken in its length and breadth, was the most trying one for fruit-trees we have ever known. Apple, cherry, and plum-trees, suffered from its rigors, and were seen in unusual numbers, standing naked through the shooting forth of spring and verdure of summer; yet, in a plantation of sixty dwarf pears, I lost but a single tree, and this not from the fact of its being a pear on the quince, nor from the undue severity of the season, by any means. On the contrary, our dwarfs came out as uninjured, so far as I can judge, as so many young mountain oaks; all of the fifty-nine remaining trees have made all desirable growth. On several, I have measured well-matured shoots of the last year's growth more than four feet long, which is all a reasonable cultivator can ask. Some have borne fruit enough to pay their first cost, if it had been marketed, but it was too good to sell, and quite good enough to eat.

Thus much I have spoken from the experience of the past. I take courage from it, and anticipate a triumphant future. But in speaking of my success, I have said nothing of the soil and management—two items in fruit growing of special importance, but which are quite too much passed over in talking about trees.

First, then, the soil. This rests on a bed of limestone (so far as we know) of impenetrable depth. Over this is a firm, hard pan or clay subsoil, and, uppermost, a clayey loam.

Before planting the trees, and as a preparatory work, I spaded the ground full ten inches deep, and, as far as possible, inverted it—i. e., put the top soil at the bottom, and brought up a new soil, never before disturbed by plough or spade. The land was in good cultivation, but no manure was applied the year the trees were planted out. The trees were obtained mainly from the reliable nursery of Messrs. Ellwanger & Barry, of Rochester, N. Y. In making the order, I was not particular to call for large trees; only good roots, with reliable tops. The trees were received in April, and planted out, so that the junction of the stock and scion should be as low as the surface. I kept the soil clean, with the hoe, around the trees (other crops being on the land, but not near enough to interfere with the trees), and this was all the attention I gave them until autumn. Of course, no watering was given when they were planted, or at any time during the summer, some part of which was dry. In autumn, I put probably a bushel of well rotted manure around each tree. This served to protect the most tender part (the point where budded) from extreme cold, and turned off surplus water from heavy rains and melting snows. In the spring, this manure is taken away from the body of the tree, and spread so that the extending roots will have the benefit of it. I spade our ground, yearly, as near to the tree as we can without interfering with the roots, and subject the surface to frequent stirring through the summer.

I have been thus particular, that none may be led astray in this matter of dwarf culture—a system in which, on proper soils, and with proper varieties, I have much confidence; yet I doubt much if it will succeed on all soils to the satisfaction or profits of the cultivator. Nor do I think it adapted to all varieties.

With us, some kinds do much better than others, though we have no particular reason to complain of any kind we have tried. Nor will it answer for all cultivators. There certainly are those who think, judging from their actions, that when a tree is set, their whole duty is done. No wonder that, with them, putting out trees don't pay. They may surely expect that their trees will die in self-defence. All fruit-trees require watching and care, and especially so the dwarf; but it is a pleasant care, and a watching that does not fatigue. The full reward follows the labor.

HYBRIDIZING THE GRAPE.—CONCLUDING ARTICLE.

BY AUGUSTUS D. ROGERS, SALEM, MASS.

MUCH encouraged by the present trial, with a view of obtaining a still greater variety of choice grapes, adapted to *open-air culture* here, and for wine making, we have again, the last spring, hybridized a few of the best of these hybrids with some of the best foreign sorts, as the Muscats, Queen of Nice, Rose Chasselas, Hamburgh, Syrian, Gross Malaga, &c., and await with much interest the result. The conclusion is, that it will be many years before any large amount of superior varieties can be obtained fit for open-air culture, in this N. E. climate, *free from all* the imperfections of the native, and *combining all* their good qualities.

A description of some few of the best fruits of these hybrids may not be uninteresting.

1. The best grape of them all has a bunch, medium size. Berries, oval, like Black Hamburgh. Size, about the same. Skin, tender, and somewhat spotted or marbled. Color, reddish brown. Flesh, soft and juicy, with scarcely any pulp, with a sweet, rich, peculiar, aromatic flavor, of extra quality. (This grape is sweet *some time before ripening*.) Ripened, first season of bearing, only two bunches, about 20th September, ten days or more before the Diana; second season (much improved, with two or three dozen bunches), about 10th October, about the same time, or earlier than the Diana. Isabellas here all cut off by frost, &c.

The vine is among the four most vigorous of the whole lot. Blossom, perfect; sets every berry. Long filament. Wood, short-jointed, and perfectly hardy. Foliage, resembling native.

2. Another grape is of medium size bunch. Berries, nearly round, or less oval than B. Hamburgh—more resembling native; larger than Diana. Skin, soft and tender. Color, brownish-red. Flesh, soft, and very sweet, retaining a very slight trace of the native. Ripened both seasons, as early, if not *the earliest* of any. First season, about 10th September; second season, latter part of September; much improved, second season, in size, and otherwise. The earliest in the garden in 1857, two or three weeks before the Diana or Concord growing near. Vine, a great bearer, both seasons, and perfectly hardy.

3. Another grape is of medium size bunch. Berries, in shape and bunch, resembling more the native. Color, like the Isabella. Size, large as B. Hamburgh. Flesh, when ripe, soft. Flavor, sweet and rich. Ripened, first season, the earliest, about first week in September; second season, about 10th October, much improved in size and quality. Vine, a great bearer, and one of the two most vigorous of the lot.

4. A grape very similar to the foregoing one, excepting in shape of the bunch and berry, both like that of B. Hamburgh. Ripened, first season, 10th Septem-

ber; second season, 20th October, greatly improved in size of berry. Second season, vine perfectly hardy.

5. A grape with bunch large, and somewhat shouldered. Berries, long, oval, larger than B. Hamburg. Skin, thin. Color, yellowish-white, with reddish flush on one side. Flesh, with little or no pulp, juicy, of an aromatic flavor. Ripened about same time as Isabella, first season; this (second one), before it. Wood of vine, quite short-jointed, perfectly hardy.

The above five grapes were all of the B. Hamburg hybrids.

6. A grape of the Sweetwater hybrids. Bunch, good size. Berries, larger than Diana. Shape, like Sweetwater. Skin, thin. Color, just before ripening, resembling Sweetwater; when fully ripe, flushed with red. Flesh, juicy, and delicate. Flavor, very sweet and aromatic. Ripened about 20th September, first season; second season, about 10th October—improved since last year. Vine, a good bearer.

Two or three vines of this Sweetwater variety came into bearing last season, for the first time, showing but a few bunches, nearly equal to in quality, and a little earlier than the best grape (No. 1) before described, but of a smaller bunch, mostly flushed with red.

Among the B. Hamburg hybrids are some kinds promising to be fine wine or table grapes.

One with bunch large, and shouldered. Berries, quite large. Skin, moderately thin. Color of the B. Hamburg. Flesh, when ripe, with little pulp, juicy, with high vinous flavor. Quality, extra. Ripened, first season, with the Isabella; last season, did not quite ripen—same as Isabella. Vine, perfectly hardy, and vigorous, with short-jointed wood, and a great bearer, both seasons.

Another grape, bunch compact, large, and shouldered. Berries, close-set, quite large, of size and appearance of B. Hamburg. Skin, rather thick, like native. Flesh, tender, of a red color, and juicy, of a strong, vinous flavor. Ripened both previous and last season. Vine perhaps the most vigorous of the lot, perfectly hardy, and a great bearer.

Several others came into bearing the past season, promising to be very fine. One, with the largest berry of any of them, but did not quite ripen. Another, with the handsomest bunch (only one) and berry of any of them, shrivelled just as ripening, but bids fair to be one of the very best.

Among the remaining ones, not particularized, are many nearly equal to some of the best described, and others of comparatively middling, and a few of inferior quality. Comparing them with the Concord Grape growing near, under high cultivation, most of the inferior class are decidedly its superior in flavor and size of the berry, the only good qualities of the Concord here, in a favorable situation, being its fine, well-set bunch, and hardy habit. Its flavor is rather harsh, and quite foxy, ripening a little earlier than the Isabella, about same time with the Diana.

A good quality, noticeable among most of these hybrids is, they never drop their fruit, like the native species, including the Isabella and Diana, about the time of ripening. Undoubtedly, they will all improve under better cultivation and more room, growing in common soil, and within six to twelve inches apart.

Having thus endeavored to give a fair statement of this experiment, and some account of its fruit in an early stage, we should bear in mind "that in raising and blooming seedling plants in this way, there is one point which it appears to be of importance to keep in view, and that is, whether it be fruit or flowers, the real properties and qualities of the seedling are not at first to be detected, and, therefore, no hasty conclusion should be arrived at as to its merits."

A GROUP OF SUMMER PEARS.*

BY L. B., NEW JERSEY.

VERY few of our summer fruits are hardy, well-shaped trees, though nearly all are good bearers. Madeleine comes first in eating. In Europe, as far north as the 55th degree of lat., it ripens always at the end of June or beginning of July; here it does not ripen before the 15th or 20th of July under the most favorable conditions. It is nearly always a juicy, sweet fruit, lacking spice and aroma, but uniform in quality; like all old varieties, it is disposed to crack, and must be picked six or eight days before it shows any signs of ripening. The tree is a good bearer but of drooping habit, and hardy enough in some localities.

Next in season, but first in quality, comes the *Beurré Giffard*, in our opinion the best of our summer varieties. The tree is almost unmanageable. Its straggling habits do not admit of a pyramidal shape, unless by close and constant watching and pruning. Once in a tolerably erect shape it is easy enough to keep it under control. It is a good and constant bearer. Its fruit is undoubtedly the most valuable if not the very best among the early varieties. Although it is advisable to pick early, five or eight days before maturity, it ripens well on the tree; but at the least change of color it ought to be picked immediately.

About two weeks later the *Rostiezer* comes to maturity; another straggling, unsightly tree, unless well pruned when young. It is a good bearer and one of the best fruits of the catalogue. Its only objection is its small size. Our engraving represents a middle sized fruit; under good cultivation, with a moderate crop, it is often larger.

Manning's Elizabeth is a most delicious, juicy, small fruit; it is constantly good; rather best; we never found an inferior fruit among a large crop. The tree is more steady in its habits and grows handsomely. It was originated by Mr. Robert Manning, the old correspondent of Van Mons, and I believe came from one of the inedited numbers sent to Messrs. Dearborn and Manning in the early part of this century.

Bloodgood and Dearborn's seedling are too well known to require a description; they are general favorites in our markets. The Dearborn was named *Dones* by Van Mons, at least we must presume it, as the grafts were sent to him, and as the *Dones* proves to be identical with the Dearborn in all its characters. Perhaps the name was lost when Van Mons received the grafts, or else we could not well account for such liberties taken by a man who, at that time, was in possession of the richest collection of seedlings in Europe.

Beurré Haggerston ripens at the same time; it is a brisk, vinous, juicy pear, a favorite with many who like subacid better than sweetness and high flavor. It is also called *Limon*, and came from grafts sent by Van Mons to Messrs. Dearborn and Robert Manning. The name was lost, as was often the case in those days of slow navigation. The original (found out afterwards) was Van Mons.

No. 8, or *Bergamotte Louis*. It is a good bearer, but succeeds better on the pear stock than on the quince.

Nearly all the summer varieties are early productive on the pear stock, and can be brought into fruiting much easier than our later varieties.

Next to those we shall point out, the *Tyson*, the *Ott's* seedling, the *Doyenné de Juillet*, or *Doyenné d'Été*, the *Beurre Goubault*, and the *Kirtland's Beurré*, as among the very best of our summer varieties.

* See Frontispiece.

THE GRAPE.

BY HENRY LITTLE, BANGOR, MAINE.



It is fortunate that people are turning their attention to the cultivation of this most desirable fruit. A lively interest is beginning to be awakened even in this northern border. *We* have greatly needed very early ripening varieties. For many years past, we have been searching for hardy and high-flavored grapes which are so early as to be *sure to ripen* in any of those Northern States. I trust these efforts have at length been crowned with success. Early varieties have been found suited to our wants in open culture, of the highest flavor, and even rivalling some of the choice foreign varieties which require to be grown under glass, and some of them the aid of fire heat, also, to bring them to perfection. This requires an expenditure of time and money, which it is an object to save, if grapes of as high flavor, early ripening, and having all other desirable qualities equal to the foreign, and cultivated only in open culture, can be had. The introduction of the Delaware and the Rebecca Grapes will probably form a new era in grape culture—at least, in this State, and probably in the United States. Most of the old varieties have proved so late as to be nearly worthless here.

The White Sweetwater, in favorable locations, will so far ripen its fruit as to become tolerable. The Isabella will not ripen unless in favorable years, and never so as to equal its flavor when grown further south.

Of the newer varieties, we are planting the Diana, which is a fine flavored fruit, and is about ten days earlier than the Isabella. The Concord, which has been so highly recommended, ripens about the same time. The Hartford Prolific is about a week earlier than either, and for that reason is valuable for northern localities. It will not rank as “best” in flavor, but it has other good qualities. It is exceedingly productive, hardy, and is a very rapid grower. It will thrive under ordinary treatment in less favorable locations, and requires less attention than most other varieties. For these reasons it will be popular; but probably the *Delaware* and *Rebecca* will be the favorites of the million, and the palm will readily be yielded to them.

DIOSCOREA BATATAS.

A CALL made by Mr. W. F. Fall in this journal, 1857, p. 564, has produced several replies of interest to the public; the whole would embrace a larger space than we have at command, and we propose, therefore, to abridge them, giving the substance of each.

This new esculent has scarcely had a fair chance. It was taken by the hand in a manner which could not fail to make us fear that it was about to be quacked into notoriety. The mode in which it was advertised was sufficiently indiscreet, to use a mild phrase, and many who paid for the small tubers thought themselves badly used. A cry was raised against it which we are not yet prepared to sanction. The potato is giving out; with the same reason might the declaimer against this old standard vegetable now attempt to cry it down. It is decidedly unwholesome, say some of our physicians; it is decidedly unprofitable, assert a

larger number of agriculturists. If new life cannot be infused into it, what are we to do? If, therefore, a substitute can be found it will be a boon of the highest value; that it is a duty of the journalist not to unjustly disparage what may be proved of infinite value to millions, is self-evident. With a feeling of the necessity of care in this respect, we now take up the mass of manuscripts which have been accumulating for the past two months, and we yield the *pas* to W. B. Prince, whose grandiloquent advertisements did not win confidence; he claims the right to be heard, and says:—

FLUSHING, January 20, 1858.

TO EDITOR HORTICULTURIST: It is to me quite amusing to find some one still ushering forth his doubts. I refer to the attack on the *Dioscorea batatas* by Wm. F. Fall, who I will show has had no experience whatever in regard thereto. On April 24th last, we forwarded twenty tubers, value \$5, to Mr. Fall per his order. These he received, and planted some time in May, six weeks after the proper period for planting them. Notwithstanding this late planting, however, long before the period for digging the roots, Mr. Fall denounces the plant as a failure. Whilst others, who have cultivated this root for four years, have confirmed every encomium that has been bestowed upon it, he, with only a few tubers, and without possessing one single root, has annihilated all its claim and demonstrated its utter worthlessness in a less number of months. Having witnessed the exhibition of splendid roots weighing one and a half to five and a half pounds, at the numerous autumnal fairs, and Mr. J. G. Sickles having exhibited eight roots weighing thirty-three pounds, and Dr. Darnall having stated that he has grown forty-five thousand tubers and twelve hundred large roots, the produce of two years, from six tubers he obtained from me, and having received from the American Institute their silver medal for the roots I exhibited at the Crystal Palace, I feel now well satisfied with the rapid progress of this esculent, so pre-eminent for its azote and albumen over every other grown upon our globe. WM. R. PRINCE.

Three witnesses now make their appearance who have had poor success with their tubers. G—, Westchester, Pa., imported from France a small lot of *Dioscorea*, which arrived about the middle of March, 1855, in fine condition. Twenty-five were at once placed in pots, to be put out as soon as the weather would permit, and the balance sold. Ground was thoroughly trenched and manured, the tubers were planted in April and received every attention, but on taking them up in November, digging down five feet perpendicularly by following a rope-like tuber half an inch in thickness, the ends of only two were reached. These as well as the others increased in thickness towards the lower ends, which were flattened and pointed at the ends so as readily to penetrate the hard sub-soil. A few were left in the ground to test their hardiness, and were slightly protected, "but they never made their appearance on this side the globe again."

A "Pennsylvania subscriber" found the tubers had increased to three inches in circumference at the thickest end—a large increase. He had one cooked, and thought it equal to the best potato. The remainder were hung in a paper bag in the cellar and forgotten. In the spring they were sprouted, but shrivelled. They nevertheless grew and twined their stems around the poles to a height of three or four feet. The roots, in the fall, were quite as fine as those of the previous year, but the old shrivelled roots had decayed; he thinks tolerably well of the article as "agreeable and nutritious," but he enters, very properly, a protest against the mode in which they were advertised.

Mr. John G. Bubach, who dates from Princeton, but mentions no State, procured tubers of the size of peas, planted in pots and thence in prairie soil, well pulverized. They received the best cultivation, but when he dug them the largest was not more than three-fourths of an inch in diameter at the largest point; four-fifths of the whole length was a mere string. These were planted the following spring, divided into pieces several inches in length, but the same result followed, if indeed the roots were not rather smaller than before.

Such has been the experience of others, but many have been more successful. The next witness whom we deem it proper to introduce is one for the defence, and he makes out an excellent case, such as should "give pause" for time to develop more fully the value of this root. We give our space to the telling of the story, only abridging it of particulars that are unnecessary to recapitulate.

Dr. F. Hollick, of Staten Island, who appears to have had a single eye to the truth, relates his experiments and their results, as follows:—

"In the spring of 1856, I made an investment of *three dollars* in the new root, for which I obtained a small tin box, about three inches by two inches, half-filled with mould, in which, after close inspection, I discovered *twelve* small tubers and bits of root, each about as large as a pea. To tell the truth, I considered them *very small potatoes* indeed, and planted them with no great expectation as to the result. The ground they were put in was a poor, clayey, soapstone soil, with a small quantity of stable manure dug in; it was, however, well trenched. Each *set* was put in a small hill of wood mould, and the hills were three feet apart, as I wished to give them a chance to run. Well! I watched these hills very carefully, but saw nothing till the 4th of *June*. Then, two leaves appeared in one hill, and, three days after, two similar ones on another. None others put forth till past the middle of June, when they came up in all the hills but three, thus leaving me but nine plants. Of these nine plants, I lost three more by an old hen, who scratched them up. The six grew above ground *very slowly* and *weakly*, except the *two* first, and these were three feet long by the end of June. They all continued to grow till frost, when the average length of the four weakly ones was about three feet, and, of the other two, probably ten feet. During the summer, the ground was kept free from weeds, and occasionally hoed; only to the two strong ones I gave two or three good soakings of liquid manure, in July and August.

"When the vines were killed by the frost, I proceeded very anxiously to dig them up, to see what was *under*! Having heard that they went down *deep*, the spade was sent the whole length of the iron, and the *hill* thrown up. The *crop* was something *astonishing*! In the two best hills there were nine roots, averaging about four inches long, and as thick as a man's finger. In the other four hills were eight more roots, each rather less than those from the two first hills! And this was all, except seven small tubers (like peas) which had formed in the axils of the leaves on the vine that came up first, where it got covered with earth. I was quite *sure* there was nothing else, for I dug all over carefully, as deeply as the spade would go, and examined closely. A humbug I now thought it, of course. A friend suggested that perhaps I had not found *all*; so I began at one of the hills again, and after getting down about eighteen inches, I discovered the *top* of a piece of root, which exactly fitted the *bottom* of the centre one I had first removed, and which I then remembered looked *raw*, as if *broken off*. I traced this root down! down! till I thought the *end* never would come. At thirty inches from the surface, I at last touched *bottom*, and turned out the remainder of the root—a piece about twenty inches long, an inch in diameter at the top, and three inches in diameter at the bottom. Adding to this the piece first obtained (about six inches), I had a root *twenty-six inches long*! gradually enlarging from less than a quarter of an inch at the top to three inches at the bottom. There was still some inches long of thin root by which it reached the surface, which I did not reckon. It resembled a large *parsnip* growing wrong end up, only the surface was fine, and covered with minute rootlets. All the others were now similarly examined, except the *meanest* of all in upper growth; and as the ground was then freezing hard, that was left unexplored.

"In the next best hill, I obtained a similar bottom piece, about fourteen inches long, making a whole root of eighteen inches in length, but rather thicker than the first. One of the other three hills gave up a root ten inches long, and the other two averaged eight inches, all thinner than the two first. I thus made a discovery in *every hill*, and one that surprised and pleased me.

"The largest root was boiled ten minutes. The skin peeled readily off, like thin tissue-paper, and revealed a mass of snow-white farina, perfectly light and dry, which all pronounced *excellent in quality*—in fact, *delicious*. It was so much relished, I had to secrete the stock to preserve it. To my taste, it was like a mixture of first-rate mealy potato with ground almonds. My family all decided they would give up potatoes at once, if enough of this new substitute could be obtained.

"The following spring (1857), my man began to dig the ground over where they had grown the year before, and, to our great surprise, turned up another root, in the unexplored hill. This was, altogether, about twenty-one inches long, and had remained in the ground all that severe winter entirely unhurt.

"I now divided my stock into one hundred and twelve small sets, but lost about thirty from the following cause: When cut, the fresh surface is covered with thick, white, gummy milk, which hardens if left in a dry place; but not knowing this, and being then unprepared to plant them, they were put in a damp cellar, and thirty of them rotted. They should have been well *dried*, and kept dry till planted.

"In the last week in March (1857), my whole stock was committed to the earth. They were now planted in a still poorer, cold, and wet place. They vegetated in May, but seemed not to make much growth till July, when the majority were about equal to my two best hills of last year. The ground had been manured with *fresh* stable dung, and some *guano*, both of which are hurtful, at least when used at the time of planting, and near the surface.

"In the early part of May, while hoeing on the ground occupied by the *Dioscoreas* the year before, I was surprised to see a fine, vigorous vine, from a *chip* broken off in the digging up, and left in the ground all winter; or, it might have been one of the axillary tubers. At all events, it made the earliest and most *vigorous* growth during the summer, and, in the fall, produced one of my best roots. My main bed was planted one foot apart each way, and during the whole of the summer, the top growth was quite meagre, on the whole. The first week in November I dug up again, and the average yield was about the same (one hill with another) as the average of my first six hills; but, by *layering* many of the vines during the summer, I obtained a good number of axillary tubers. I have thus got from my original three dollars' worth quite a stock—enough to plant probably a quarter of an acre of ground, with a few for tasting. The result, on the whole, has given me a good opinion of the *Dioscorea*, and I think that, when the cultivation of it is better understood, we shall succeed well with it. My own experience tends to show that it should be planted *in the fall* or early in spring, and that, if any manure is used, it must be well decomposed, and must not be in contact with the root in the early stages of its growth. It should, in fact, be put at the bottom of the digging, and that should be at least thirty inches deep. Above all, the ground should be light and *deep*. Any hardness in the soil, or any obstruction whatever, seems to hinder its growth both by preventing the vine from shooting up, and, also, by twisting and dwarfing the root.

"Now, Mr. Editor, here is the result of one small experiment. Let us have all the light we can, for I cannot but think the subject is worthy of *thorough investigation*. I should particularly like to know if any of your readers have tried

the *Dioscorea* with *other manures*, and if so, what were they, and how used? also, the kind of soil they were planted in, and the season when planted?

"One of my best roots grew with nothing but good, light, wood soil, and no manure. Now, gentlemen, you who have experimented, tell us all about your *Dioscoreas* [and be as brief as possible—Ed.] MEDICUS."

The last testimony we deem it important to produce, is that of Andrew S. Fuller, of Brooklyn, N. Y., who states that his own experiments have been quite satisfactory *wherever he planted pieces of roots*; that they must be left two seasons in the ground; that the same root does not continue to enlarge the second year, but that, after throwing out its new roots, it decays. If thus treated, on the two seasons' plan, it will yield as much per acre as has been claimed for it, or more than double the common potato. He plants in rows two feet apart, and six inches apart in the rows, which gives 43,560 tubers per acre, allowing only one pound each, "which is far below the average," and has 43,560 pounds per acre, or more than five times the average of the potato. He thinks the depth it attains is advantageous, inasmuch as it is by that occupancy of otherwise waste ground we get so heavy a yield.

The testimony, on the whole, is sufficiently favorable to induce a continuance of the experiments. It is still a question whether those who took much pains to ridicule this edible root and made their fortunes by the Sorghum and Imphee seed, will not have to change their tactics. The *Dioscorea* is still in repute both in France and England, where they talk of eight and eleven tons to the acre. This journal has waited for facts: in the case of neither plant has a proper or permanent solution yet been arrived at among us. Meantime we must be patient and hear again from such careful observers as Dr. Hollick, and especially let us learn what have been the results of experiments at the South with *Dioscorea*.

A TRIP TO CUBA AND THE SOUTHERN STATES.

No. 10.

NATCHEZ, MISSISSIPPI.

NATCHEZ is pre-eminently the "Persia of roses." In no part of the Union have we ever seen them attain such perfection and beauty. It so happened that we were in this Paradise at exactly the "happy moment," the 4th of April, when there was a *gush* of bloom that was as delightful as surprising.

The best exhibition was at the garden of Mr. Andrew Brown, on the river, a short distance above the town, sheltered by a high bank. Here reside Mr. and Mrs. Brown, in the handsomest garden, without exception, we have seen for many years. Both are enthusiasts, directing and enjoying to the fullest extent their beautiful domain, and by their liberality and goodness in dispensing novelties brought at great expense from long distances, have created a gardening spirit in this region. The entrance view of their long garden vista tells the story at once; an eye accustomed to looking after effects is delighted, and knows what to expect. After this *coup*, the details are highly satisfactory; the borders of each bed, where we should depend upon box edgings, are formed of dwarf pomponne roses, little miniatures of a few inches in height, and all of them in the fullest bloom. Nothing of the kind can be more beautiful; it blooms all winter except January, and is an evergreen. Mr. Brown's Chromatella, Luxemburg, La Reine, Belle Isidore, Solfaterre, Cloth of Gold of a really gold color, it was difficult to designate, and we had to ask their names, so very superior in size and color are they

to the same kinds at home. The Sanguinea climbs to the height of eighteen feet over evergreens that add to its beauty. Moss roses are quite superior to those of Paris. The Gloire de France was never exceeded anywhere. Reine de la Gultare measured thirteen inches in circumference. Myrtle is used for borders and hedges, and over these clamber in wild luxuriance the Red Hermosa and the Lamarck. Ivy seems as if it would encircle every mound and tree, knowing no limits.

Then the fruits; peaches, pears, plums, fig-trees as large as our apple-trees, all conspire to carry the garden lover out of his former experiences. Grapes damp off, and though Mr. Brown has planted long acres of them, he has not a satisfactory return. The Pittisporum is cut like box bushes, and was full of bees and bloom. The evergreen magnolia has been made much of in this garden, and Mr. and Mrs. Brown deserve great praise for showing what a garden may become with intelligence and love of the subject. Mr. B. is a correspondent of several learned societies, and has done good service to science by exploring the geology of the Mississippi Valley.

Coniferous trees have not been much introduced here, but they have an evergreen substitute of extreme beauty and value. The *Gloria Mundi*, as it is here usually called, is a feature that with care in other matters makes the gardens of Natchez rival the finest in England. It is the *Prunus Lauro-cerasus*, growing as rampantly as the Osage Orange, and may be trimmed into every shape. The finest effects are produced with it as single plants, avenues, and hedges.

Though Camellias, &c., will live in the open air, at most of the first class places conservatories in fine order will be found.

After visiting many beautiful, nay, superb residences, we passed a day at the beautiful seat of General Quitman, where hospitality and refinement rule supreme. An elegant mansion, fine garden, and park-like grounds commanding fine views, first impress the stranger, but an introduction to the owner is an event to remember. General Quitman possesses more mementos of the high estimation of his countrymen than any man we know, and he has filled more honorable offices than we can enumerate; so that it is somewhat difficult to address a gentleman so full of titles. You may say Governor, General, Congressman, and a long list of epithets without going wrong. We were shown the numerous swords presented to him, and were astounded at the display. Commander of the City of Mexico, General Quitman has a set of superb pictures of the place, and others of the successful battles in which he fought. A fine and productive garden is found here, the General understanding all its details. A very valuable library leaves nothing to desire.

We must only enumerate the beautiful residences of the millionaires of Natchez, or we shall run such riot as will leave no space for our valued correspondents.

Natchez being on a high bluff, enjoys the reputation of a healthy situation, and here resort the wealthy cotton planters of this region, uniting to form a society that has few if any superiors in the world for intellectual cultivation, elegance, and refinement. The following are the country-seats we saw :—

Dr. Mercer's, Laurel Hill; Gen. Quitman's, Monmouth; Mrs. Williams', Ashland; Mrs. Ogden, Kenilworth; Mrs. Dunbar, Hawthorn; Judge Boyd's, Arlington; Major Chotard's, Somerset; Mr. McMurren's, Montrose; Mr. Marshall's, Richmond; Dr. Duncan's, Auburn; Mr. Shields', Montebello; Mrs. Elliot's, Devereux; Mr. J. P. Walworth's, The Burn; Mr. Surget's, Clifton.

We are afraid to trust ourselves with any further description of Natchez, and leave its hospitalities with regret, only adding the single remark, to avoid its hotels.

Our next number must conclude the reminiscences of this highly interesting "trip."

CONSTRUCTION OF GLASS HOUSES.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

THE construction of glass houses has undergone much improvement during the last twenty years. The change from the angular to the curvilinear shape, introduced a simple and superior method of forming glazed roofs. Not that the curved outline does, in itself, possess any important advantages; but the system of glazing with large glass in slight fixed rafters, not only admitted more light, but was cheaper than the older method of heavy rafters and sliding sashes. The expense consequent upon the formation of curved rafters, did not, in effect, render these houses less expensive than the old method, but there was the gain of more light and less opacity, and this, I am rather inclined to believe, is the only superiority such houses possess; and, that angular houses constructed on the same principle are much cheaper and equally efficient.

I have for several years adopted this system of glazing roofs, and as it is the cheapest and *best* mode of erection that I know of, I annex a description of the manner I usually have them put up; so that those who have been deterred from erecting graperies and green-houses at eight and twelve dollars per foot in length, may be enabled to do so at one-half of these rates.

Single roofed cold graperies may be put up in a rough but substantial manner at even lower rates than these, but if the best American glass is used (as it ought always to be) and the wood work planed and painted outside, they will cost from four to six dollars a foot in length, varying in price according to the height and width of the building, and the material used for foundation.

Fig. 1.

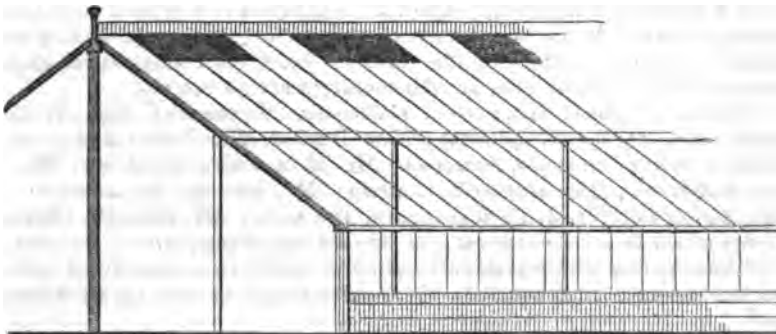


Fig. 1, is a section of rafter one-half of full size. These are made out of sound, clean, inch thick best white pine boards, sawn out in strips three inches wide, and prepared for glazing. They are then fitted on the bottom and top wall plates, and permanently fixed. Their distance apart will depend upon the size of glass; I find 10×14 a convenient sized pane; to suit this the rafters will require to be $14\frac{1}{2}$ inches apart from centre to centre. In glazing, the concave surface of the glass should be turned outwards, to throw the water into the centre of the pane. There will be little or no leakage or drip in

a house glazed in this way.

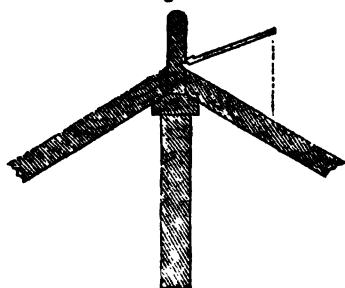
Fig. 2, represents part of a roof fixed for glazing. About the middle of the

Fig. 2.



roof a purlin is run across and supported by uprights and posts; any degree of strength can thus be given. Ventilation is secured by hinged shutters or glazed sashes near the top of the roof, and by openings in the front wall below the glazed portion. Ample space for airing ought in all cases to be provided. A span roofed house should have means of ventilating to the extent of a three feet opening the whole length of the house. The top ventilators shut down on the rafters, they are hinged to the ridge, and to prevent leakage, they shut into a slight groove, as shown in Fig. 3. Houses constructed in this manner are not only neater in appearance, but are better adapted as plant habitations, than those built with heavy rafters and sliding sashes.

Fig. 3.



AN AMATEUR'S VIEWS ON THE PROPAGATION OF NEW VARIETIES OF FRUIT.

BY W. CREED, ROCHESTER, NEW YORK.

WITHIN the past few years much has been said and written, and numberless queries propounded in respect to the adaptability of certain varieties of fruit in particular localities or soils, or for the purpose of gratifying those who may desire to enter upon any enterprise in this direction; and while discussions upon these points have been continued without intermission, the idea of propagating new varieties from seeds has not received that share of intelligent support which the subject deserves, to make it popular with the public mind.

Whatever may have been the theory or success of various distinguished pomologists, either of ancient or modern times, in respect to this very interesting branch of culture, we will not weary the reader by speculating upon it, but merely give our views, in the hope of attracting more attention to its importance, as well as hold out a prospect of success to those who may experiment in a right direction.

Our first impression, then, upon the amateur's mind as an index to the propagation of new varieties, is the great contrast observable in habit, wood, foliage, fruit and seeds of each distinct class of fruit; this will lead us to other thoughts. Now, if we take the pear for illustration, and select a few varieties at random, such as the White Doyenne, Van Mons Leon le Clerc, Louise Bonne de Jersey, Bartlett, Stevens's Genesee, and Duchesse d'Angouleme, those who are familiar with them will be instantly reminded of the contrast spoken of; but the most important contrast in these distinguishing points, so far as the propagation of new varieties is concerned, is in the seeds themselves; take up your knife and help *quarter* a pear from each of the above varieties, compare the seeds, and the contrast will be equally as convincing as in the fruit, foliage, &c. In reference to the seeds, however, we may expect that ninety-nine in a hundred in any particular variety closely resemble each other in shape, form, &c., *peculiar to that variety*, and producing *seedlings* exhibiting a *close affinity to each other*, and, therefore, not likely to result satisfactorily to the experimenter; but as soon as we find a marked difference in the *formation of a single seed* in any selected variety, *that seed* should be chosen by the amateur, for in *that seed* (which apparently is one of nature's freaks) is the symbol (in embryo) of a new variety, whether "good,

very good, or best," will be left for Providence to work out; man also doing his share in the matter. Another part of the success, it is evident, will depend upon the choice of the best varieties, from which to select one of these "freaks," or "sports," which are more or less traceable throughout the whole classification of vegetable physiology, and intended by an all-wise Being to excite the wonder and admiration of man, prompt him to energetic action, and to study out the workings of Nature in all its beauty and complicity.

Experimenters should also be again reminded of the possibility of having to cut up quite a quantity of Bartlett's, &c. &c., before meeting with a seed so distinct in formation or appearance from the generality of seeds, to warrant its choice to propagate from. Those, therefore, who may be liable to mourn over this *destruction* of pears, should find a substitute in the apple, and as this fruit is quite liable to these "sports," and in frequent use for culinary purposes, it offers a good opportunity to closely inspect the seeds.

To test seedling pears at an early date, graft scions upon the Angers quince stock, and the probability is a new variety may be known at two, three, or four years from grafting. Apples may be forwarded in the same manner by grafting upon the Paradise stock.

SELECT LIST OF SUMMER, AUTUMN, AND WINTER PEARS.

WE are frequently asked, about this time of year, when so many amateurs are thinking of their plantations, to furnish a select list of pear-trees. The following will be a safe guide:—

P, indicates the sorts that do best on pear stocks, and *Q*, those that experience has taught are most suited to the quince or dwarfs.

Summer.

p. Madeleine.
q. Beurré Giffard.
p. Dearborn's Seedling.
p. Manning's Elizabeth.
q. Doyenné d'Été.
q. Osband's Summer.
q. Haggerston.
q. *p*. Julienne.
q. Tyson.

q. Rostieser.
q. Ananas d'Été.
p. Bartlett.
q. *p*. Belle Lucrative.
p. Brandywine.
p. Bloodgood is too poor a grower to be much recommended. We should prefer the Cabot, the Henkel, the Baronne de Mello, instead.

Fall—Early and Late.

q. Duchesse d'Angouleme.
q. Beurré d'Anjou.
p. Flemish Beauty.
q. Urbaniste.
q. Kirtland's Seckle.
p. Seckle.
q. Andrew's.
q. B. Superfin.
q. B. Diel.
q. Howell.

q. Louise Bonne.
q. *p*. B. Clairgeau.
q. Buffum.
q. B. Hardy.
p. Church.
p. Huntington.
q. B. Langelier.
p. B. Bosc.
p. Sheldon.

To which can be added:—

p. Kingessing.
p. Doyenné Boursac.
p. Onondaga.
p. Chancellor.

p. Heathcott.
p. Washington.
p. Abbott.
p. Ontario.

Winter, or Late Fall.

p. Doyenné d'Alençon.
 q. p. Niles.
 p. Lawrence.
 q. Glout moreeau.
 p. Beurre d'Arenberg.
 q. Vicar of Winkfield.
 p. Dix.

p. Colmar Nelis, or Winter Nelis.
 q. Bergamotte Esperen.
 q. B. Bachelier; rather a fall pear.
 p. Columbia.
 q. Jaminette.
 q. Easter Beurré.
 q. Leon Leclerc Laval.

We fear that Church and Huntington, and some others, cannot be found yet in the nurseries. If the grafts of some of the new pears can be got, it would do well to cultivate, or, at least, to test them. An attentive reader of these pages will remember others of great promise, such as the Alexander, &c. &c., which well deserve consideration; but a greater variety than the above will not be necessary, and they are such as have been well tried and approved.

An amateur will endeavor to make a selection which will embrace as many seasons of maturity as possible. A few who desire only such as will ripen while they are at their country residences, and do not desire to be hampered with the care of the winter varieties, will adopt the two first lists. See the mode of ripening adopted by a Boston vender, in the notice of the Massachusetts Horticultural Society in the last number, page 89.

A PREVENTIVE FOR WOOLLY APHIS.

Aphis lanigera.

BY WM. P. HARDEN, DOWNING HILL NURSEY, ATLANTA, GEORGIA.

THIS is, undoubtedly, the greatest enemy known to the apple-tree. They seem to destroy the tree by attacking the roots under ground, and not the tree above ground, as is supposed by many. As far as my observation goes, they are perfectly harmless as long as they confine themselves above ground to the body and branches of the tree; or, at least, out of hundreds of trees that I have examined that showed signs of injury from these insects, not a single one but had the aphid in abundance among the roots.

After experimenting with various substances, in search of a remedy, without success, I tried pulverized charcoal (the kind used was the cinders from the pipes of the common locomotive), with complete success. This remedy, though slow in its action, is certain. It was applied by removing the earth from the roots around the body of the tree, then freely applying the charcoal. No danger need be apprehended of applying too much, as it is entirely harmless to the tree, yet so offensive to all kinds of insects, or even animalculæ, that they cannot live long in, or even very near it. Charcoal, being an indestructible material, continues to act for an indefinite time, thereby becoming a preventive as well as a remedy.

Again: It not only acts as an absorbent, retaining the volatile gases (valuable food for plants that would otherwise be lost), but makes one of the very best substances ever used for mulching, as it is, for reasons given above, entirely free from the objections that obtain to ordinary substances used for that purpose, which afford a kind of harbor or protection for different kinds of insects that finally attack the tree. This remedy has been only tried on the apple-tree. It is very probable that it would protect the roots of this kind of fruit from the various insects with which they are infested.

INSECTS, NO. 4.—APHIS, OR PLANT LICE.

BY J. STAUFFER, MOUNT JOY, PA.

THIS prolific and obnoxious family of vegetable parasites is interesting, on account of its anomalous character, being considered viviparous during the summer, and oviparous in the autumn, by that distinguished entomologist, T. W. Harris, M. D. Vincent Köller also informs us that Schmidberger collected eggs of the Apple Chermes (*C. mali*) which hatched in March, on plants in his room. This may be true of some species, but will not apply to others, which, if not always viviparous, are rather pupiparous, and not oviparous, as stated.

Stephens, in his *Systematic Catalogue of British Insects*, has recorded forty-nine species of the genus *Aphis* alone, and others belonging to several cognate genera. Six genera are given, by Westwood, of the family Aphidæ, viz: *Aphis*, *Lachnus*, *Atheroides*, *Erisoma*, *Adelges*, *Thelaxes*, and perhaps *Brysocrypta*. It has been proved, by Reaumer, that in five generations (and it is supposed there are twenty in a single season), one *Aphis* may be the progenitor of 5,904,900,000 descendants. Maunder says ten thousand million millions are thus generated in one season.

The species reside in great societies, upon almost every species of plants, sapping the vital currents of their juices, inducing sickness, gangrene (or the growth of fungi), and death of the plants so infested, in numerous instances; and when not killed, they are greatly impeded in their growth from the exhaustion sustained by these parasites.

The following cut illustrates our common species, found infesting our gardens and orchards. A brief notice of each figure, in the numerical order engraved, shall be given, and such remarks made as the facts in the case seem to call for:—



Fig. 1 represents a woolly species without honey tubes, no doubt belonging to the genus *Erisoma*, and perhaps identical with the *Aphis lanigera* of Hausmann, and quoted by Mr. Harris. Those are in small colonies, webbed in, or covered with fine, cottony threads, in the chinks of young suckers around the apple-trees, in knot-holes on the trunk, or axils of the leaves or young shoots from the main trunk of the tree. Fig. 2 represents the single insect; 2, the same, more highly magnified, showing the manner in which the white threads are expelled as excrement; other finer threads may issue from the spiracles or pores of the body, as stated by authors. Fig. 3 represents one pressed between two pieces of glass, exhibiting

the young (fully formed) floating in the liquids of the parent. Fig. 4 is one of them separated, showing the full formation of the young insect. Fig. 5 is a string of ovaria of increased size to the fully-formed creature. Fig. 6, a jelly-like globule, surrounded with fine, flocculent threads, found among the Aphids. Is it an egg? On the 23d day of November, 1857, in the presence of Mr. McFadden, I opened one, and discovered it filled with young, the eyes of which, and the contour of the body, plainly visible in each, all in a kind of sac or matrix of the parent. Why lay eggs at all, since our severe cold nights of November 19 and 20, when the thermometer was 6° below freezing, has failed to destroy the vitality of the parent? This species do not appear to have any winged ones among them. Alfred Smee, F. R. S., gives a figure similar to Fig. 4, and says: "This therefore shows me what sort of an egg we may expect to find, if the creature ever lays one."

Fig. 7 is a species noticed August 22, 1857, enveloping the lower branches of a noble specimen of the American Beech (*Fagus ferruginea*), like minute white-headed fungi, at first sight. The oscillating motion among the little, cottony tufts arrests the attention. On closer inspection, we find they are little creatures with their bodies erect, terminated by a plume of fine, white, tangled thread, with a few thicker and longer ones interspersed, busily engaged at pumping up the sac, by means of their suctorial apparatus. They have six-jointed antennæ, a short collar, ample thorax, body carried at a right-angle thereto, of an ochraceous color, and two greenish lines from the collar to the extremity of the body. On careful inspection, I cannot reconcile it with any of Westwood's genera. I consider it an undescribed species, at least. Those, no doubt, have winged individuals, having noticed rudimental wings on some specimens. Fig. 8, a globule of fluid of one, and a living aphid expelled from the other, of two individuals among a number on a cabbage leaf; same as Fig. 9, the *Aphis brassicæ*. Body, greenish, covered with a whitish, mealy substance, in dense patches, on the cabbage, called *mildew*. These were also active on this 23d day of November, on the heads of cabbage left standing in my garden, of all ages. I have failed to detect eggs among them, but have seen living aphids, and the pupæ, also of ichneumonflies, contained in them. Fig. 10 shows the under side of one, having a flat, fringed disk, by which it was firmly attached to the epidermis of the leaf, apparently dead, though containing the pupæ of its brood alive (similar to the scale insect) within the globular, inflated carcass; in others, the pupæ of ichneumons, of which latter I also captured specimens while engaged at ovipositing. The winged aphid is similar (Fig. 11) to those of the *A. vastator* of Smee (*A. rapæ* of Curtis), Fig. 12 and 13, at rest and on the wing. On the warm afternoon of November 16, I observed them flying in clouds. The collar is of a dirty yellow (as also the abdomen), or brownish. The thorax high, of a shining black; antenna with a terminal, long, hair-like joint, variable (see Fig. 13). Fig. 14, shows the fore wing.

Fig. 15, a peculiarly square-shaped specimen, on the snowball. Fig. 16, a small, black fellow, found in great numbers on various plants—perhaps Smee's "little black rascal"—on the wing, called "smother flies." Fig. 17, from the *Phlox divaricata*. Fig. 18, also on the snowball, with short, honey tubes, of lead colored pubescency; proboscis short. Fig. 19, the promucis, or snout, with a long tongue, or setæ, as usually seen. (Fig. 20, Smee's figure, with a setæ and two sheaths, which I could not see.) Fig. 21, the same, with the setæ inclosed. Fig. 22, a leg; shin, hairy, bristled; tarsi, apparently only one-jointed; if there are two joints, as stated, the upper must be very minute. Fig. 23, the anal prolongation of some, and the honey tubes. Fig. A, a rear view of a winged specimen; *o o*, the deflexed wings, like a roof; *s s*, the honey tubes. E shows a peculiar projec-

tion on the sides of each eye, noticed in winged aphids. I have seen the male vastator, in his winged state, in connection with a wingless female, November 18.

I have seen both winged and wingless females produce their young alive, up to November 20. They were, on the 23d of November, congregated in dense groups on the under side of the few remaining leaves on my dwarf apple-trees, on the *Kerria japonica*, and other rosaceous plants, in their winged state, and all grades of wingless ones, with their snouts inserted into the leaves, unharmed by the cold, rain, and frost, and likely to withstand the severity of the winter, as shall be seen. But eggs I cannot find. Though Mr. Harris says "the winged plant-lice provide for a succession of their race by stocking the plants with eggs in autumn," and, after stating that those hatched in spring are all females, producing brood after brood to seven or more generations, without the intervention of a male, continues: "This extraordinary kind of propagation ends in the autumn with the birth of a brood of males and females, which in due time acquire wings, and pair; *eggs are then laid* by these females, and, with the death of these winged individuals, *which soon follows*, the race becomes extinct for the season."

Mr. Smea, after close scrutiny and patient investigation, asks the following questions: "Does the vastator lay eggs which hatch in spring? Does it hibernate and come out again in spring? Does it continue to propagate, notwithstanding cold, frost, and rain?" And adds: "Up to November 4, I have found the creature bringing forth its young alive."

This sustains my observations, and I will hazard the assertion that they do not lay eggs, that they do hibernate, and come out again in spring—at least, those species I have illustrated and examined.

The means nature has provided to check these creatures, and the remedies to destroy them, I shall defer for another article, this having become too lengthy, and much of interest connected therewith not said. Though so small in size, at most only one-tenth of an inch, their immense numbers make them formidable to the horticulturist, and therefore a thorough knowledge of them is desirable. By way of a moral, I'll conclude with the following couplet, by F. H. S. :—

"Daily vices, though small they be,
May make our souls with sorrow rife;
Like aphids on some plant or tree,
They sap the very springs of life."

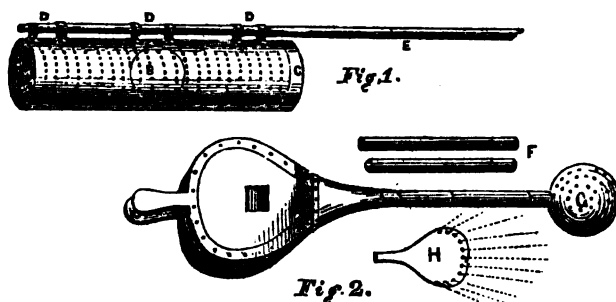
GRAPES AND MILDEW.

BY WM. H. READ, CANADA WEST.

MR. EDITOR: As your correspondent in the January No. of the *Horticulturist* has solicited my mode of preventing and destroying mildew, the great bar to successful growing and ripening of foreign grapes in the open air in this country, and as I have succeeded in producing them of very great excellence, even surpassing in grand appearance, large berries, and magnificent clusters, those grown under glass in my own neighborhood, and as your Rhode Island Horticultural Society and committee (who had some of my clusters on exhibition the past season) looked upon them "almost as a miracle," "and doubted of their having been grown in open air;" and again, from the fact that my grapes, both foreign and native, carried off the first and second prizes wherever they were shown—all this induces me to imagine there may be some virtue in my mode of treatment, and is the excuse I offer for the occupation of space in your highly esteemed and increasingly valuable journal.

First, a good rich border is indispensable. As soon as the frost has destroyed the foliage, cut all the present year's wood back to the third and fourth eye; lay the cuttings or some other brush directly under the pruned vine, and over this lay straw; bend down the foreign vine on this, and cover with straw again, holding all down till an assistant lays on an inverted sod; then cut more sods, and lay them like shingles on a roof, and the work is done, and your vines will not suffer from the heavy rains of autumn and spring, and their eyes will not be put out by hard substances, and the result will be, every eye will reward you with rich clusters.

Then the next enemy to be looked after is mildew; and for this monster I have constructed a formidable weapon after this fashion:



Apparatus Fig. 1 is a tin pipe, twelve inches long, three inches in diameter, with a button in one end, and a lid C, with a wide band, shutting well on the other, where the sulphur and ball are put in. The ball B is made of twine, and should be a little smaller than the pipe, and well stitched, to prevent its becoming loose. D D D are three thimbles, well soldered on, to receive the bamboo handle E, which can be from two to twelve feet, to meet the wants of the proprietor, but should not be less than two feet, in order to keep the sulphur from the operator's clothes. The holes for the escape of the sulphur, must be small; a common darning-needle will pierce them quite large enough, and they should be about half an inch apart, all over the apparatus. The ball in the apparatus acts as pulverizer of sulphur, accumulator of wind, and expeller of both.

Fig. 2, *Hand Bellows*.—F, pipes or joints made of tin, to fit nicely on the nose of the bellows, and by adding joints, any length desirable may be obtained. G, a tin globe, with a short socket to fit nicely on a joint, and through which the globe receives the sulphur for operation. The holes here must be very small, and half an inch apart all over the globe. For the grape-house, where the vines are trained singly up the rafters, a rose similar to that of a common watering-pot will be preferable, with small holes in the end, H. This will enable the operator to shoot close, and hit his mark without difficulty. If the sulphur adheres to the tin, and clogs the holes, slip in a marble, and shake occasionally.

Note.—When much work is to be done with dispatch, No. 1 is preferable, as it is simple and not liable to get out of order; and when the bamboo-handle is playing briskly through the left hand, and the ball going on to the tune of Fisher's hornpipe, the sulphur will be doing its duty, depend on it, flying like drifting snow before a hurricane.

[These are ingenious contrivances, respecting which all who have seen them in use speak with applause. We thank Mr. Read for his lucid description.—Ed.]

FRUIT GROWERS' SOCIETY OF WESTERN NEW YORK.

THE winter meeting of this Society was held at Rochester. As usual there was a full attendance from a large portion of the counties embraced by the Society, from Syracuse to Buffalo.

There were several fine and select collections of fruit, among them 40 varieties of pear from Ellwanger & Barry, of Rochester, and there were other collections of apples and pears from R. B. Warren, of Genesee Co., John B. Eaton, of Buffalo, H. E. Hooker & Co., of Rochester, and W. P. Townsend, of Lockport. S. G. Crane presented a dish of Josephine de Malines pear, in perfect condition and of exquisite flavor. H. Spencer, of Yates County, exhibited fine specimens of the Tompkins County King apple; and J. M. Whitney, of Rochester, a basket of very large and splendid Jonathan apples.

The following is a condensed account of the discussions:—

CULTURE OF THE APPLE.—L. F. Allen, of Buffalo, regarded Western New York as the finest apple-growing region in the United States—extending from Syracuse to Niagara River—and excepting the region about the eastern end of Lake Erie. This fruit, it was true, grew finely in various parts of the West, but the specimens lacked the high, fine, piquant flavor of the fruit here. As they grew larger, their flavor was diluted.

H. E. Hooker cited the character of the soil in Monroe County (about Rochester), as showing the influence of different soils—light at the north, heavier at the south—but he regarded the nature of the subsoil as much more important than that of the soil itself; if there was a good natural drainage, so that the water could descend freely, and not remain stagnant, trees would grow much better than on the finest and most favorable soil without such drainage—and that he could not therefore recommend a sandy or a heavy soil, as being best, until he knew the subsoil; and he cited several cases to prove the truth of this position, and where excellent management without this requisite had resulted in partial failure. P. Barry corroborated these remarks, so far as the importance of a dry subsoil is concerned, but he decidedly preferred a good strong loam to a lighter soil. He did not think apples so local in their character and adaptation as some regarded them. He had seen the Newtown Pippin and Keopus Spitzenburgh in Illinois, in great perfection, and a large cultivator there had assured him that if he were to plant a market orchard there he would select two-thirds Newtown Pippin. L. F. Allen agreed with others on the importance of drainage, but he would greatly prefer *natural* drainage as immeasurably superior to any artificial tile or other drainage; he would never in any case plant an orchard on soils naturally wet, with any amount of artificial drainage that could be given it. [A member present asked him, "What shall I do with my own heavy wet soil; I have come here on purpose to learn what I can do with it?" He replied, "Swop it away, and get better."]

H. E. Hooker had planted an orchard on a well-drained piece of land by ditching, but had never had good fruit from it; on land with natural drainage he had grown specimens of the finest quality. He did not think that the heavy, wet soils of the southern part of Monroe County, could be properly prepared for a successful orchard at a cost of a thousand dollars per acre. He alluded to successful *marketing*; small orchards for home use might do for a while on artificially drained lands, but never reliably on a large scale. T. C. Maxwell, of Geneva, entertained an entirely different view; he knew tile-drains at Geneva that had been in successful operation nineteen years without any defect or derangement; he had dug up old trees and found almost the whole of the roots above eighteen inches, and this whole amount might be easily rendered dry by tile-draining. P. Barry, in allusion to the *side-hill* drained by H. E. Hooker, and where his orchard had failed, alluded to the fact that springy side-hills are the most difficult of all kinds of land to render dry by drainage, and he feared this, after all, had not been drained at all effectually. This remark was again objected to by T. C. Maxwell, who had been entirely successful in draining a springy side-hill by the *regular* system of tile-ditches, placed at regular intervals, which conducted the water down hill by its shortest and most direct way, thus carrying off all the water of the springs. H. E. Hooker stated, in answer to a question, that on account of the irregular nature of his side-hill land, he was not able to give it a regular system of drainage; and, on those parts which did not seem to require it, the subsoil was so hard that the roots could not penetrate. He thought a deep soil important. C. S. Cole, of Spencerport, said that all artificial under-drainage was very valuable, and he would have an orchard on his land even if it was wet by the best drainage he could give it; yet, nevertheless, with tile-trains on an unfavorable land, only eighteen feet apart, his fruit was much inferior to that from trees grown on a good pervious soil with natural drainage. Dr. Bristol, of Dansville, mentioned the case of an orchard of his on land on Cayuga Lake, where the soil was favorable, and

where they had always flourished till two years since he bought them, and then they immediately died, not because he had become their owner, but because from the extreme wetness of the past two years the roots had been flooded, the water rising much nearer to them than ever before. If, therefore, a naturally good soil, but too wet, could be sufficiently artificially drained, it would be all that is necessary; the only question was that of cost, in placing the drains near enough together. L. F. Allen admitted the *practicability*, or rather possibility, of draining wet lands for orchards, but that the expense for commercial orcharding would render it very unprofitable. He thought there was not one-tenth of the land of Western New York that was *just right*—some of this, however, extended over large tracts; and he would recommend orchardists to select such tracts. Other regions would, however, answer a good purpose. L. B. Langworthy thought that one soil was about as good as another, but drainage of great importance.

CHERRIES.—P. Barry being called upon said he would recommend, as a select list for family supply, the Early Purple Guigne, Belle d'Orleans, Governor Wood, Mayduke, Black Tartarian, Black Eagle; and, for good late sorts, Belle Magnifique and Large English Morello. L. F. Allen inquired of him why, if this list were enough, he cultivated and offered so many sorts for sale? He replied that, if twelve different men were to select for themselves, they would each choose different lists, and probably consume all the different kinds they had; and, in fact, they had constant inquiries for sorts they did not propagate. L. F. Allen stated, as a proof of the difference in taste, as controlled by habit, that he had offered a man from the West, who had never seen fine fruit, some of his most delicious plums, when he replied, "I would rather have one wild prairie plum than a bushel of your sorts," and he positively refused to take them as a gift.

VARIETIES AND MANAGEMENT OF THE GRAPE.—P. Barry regarded the Isabella as the only one of established reputation that he would be willing to plant extensively in Western New York. L. F. Allen thought the Isabella would not ripen well in most localities, and he looked to earlier and newer sorts as likely to prove better. H. E. Hooker had seen other varieties he would prefer to the Isabella, but his experience had not yet been sufficient with them, and among these he named Diana. W. B. Smith, of Syracuse, and T. C. Maxwell, of Geneva, decidedly recommended the Isabella, if favorable localities could be selected. — Peck, of Bloomfield, had a vineyard of Isabella that ripened the present very unfavorable year. As commonly grown through the country, with neglect in culture and pruning, the Isabella does not ripen. He keeps his grapes for winter in as cool a place as possible, in open barrels; he finds it better to have them open to the air than if covered. He uses tubs made of barrels sawed in two, as being preferable to baskets, which, yielding, are apt to bruise the fruit; he cuts the stems in picking, and is especially careful to remove every imperfect or decayed specimen, which will taint all the rest. To send off, he packs them closely in pasteboard boxes, packed tightly, so as not to shake or rattle; he sent them in perfect condition in this way to Iowa by express.

W. B. Smith, of Syracuse, had packed them in alternate layers of cotton batting in pasteboard boxes, in a cold cellar, and had preserved them till the 10th of June in good condition, except a slight taste of cotton. C. P. Bissell had packed them without cotton, and kept them in fine condition till March. C. Parsons, of Genesee, had kept Isabella grapes till April; had put down generally about eight bushels (only for family use), and he had plenty all through winter. He had found them to keep best in a cold place, packed tight in boxes in alternate layers. The cotton and close covers kept them from being frozen, although in one instance the thermometer in the garret where they were placed had sunk to five degrees below zero. Several members spoke of the importance of handling them as little as possible, and of avoiding the use of baskets on this account; and also the necessity of *full maturity* to facilitate long keeping—that a slight frost does not injure a fully ripe grape, while it would injure or destroy an immature one. Bunches with green stems were not ripe. There is no doubt that different degrees of moisture in the different apartments used for packing them away may greatly affect the success of different modes, and the wetness of the season may exert a like influence. Several members mentioned instances where girdling, or tying cords around the bearing vines, had greatly increased the size of the grapes, and much hastened their maturity, but this portion of the vine was of course of no use afterwards; but the mode might be adopted where the renewal system is employed. This practice, however, as P. Barry stated, injured the part *below* the ligature, by withholding the nourishment which would otherwise descend to that part and to the root. As a proof of the importance of leaves to the plant and root, he stated that he had known of some cases where the mistaken notion of picking them off to let in the sun on the fruit had been extensively adopted, and it had destroyed the vines.

Country Gentleman.

EDITORS TABLE.

THE WEATHER.—Up to the 10th of February, we had, in this region, weather which allowed out-door operations, but, on the 11th, the thermometer marked 14° above zero—a difference of 34° in twenty-four hours. Ice dealers began to rejoice, and commenced their operations on the 13th. The 14th opened with a snow-storm, and the cold continues as we write, on the 21st.

UNITED STATES AGRICULTURAL SOCIETY.—When our last number went to press, this Society was in session at Washington. Its sayings and doings have been chronicled sufficiently, but we must record the resignation of its late President, and the present of plate given to him. His speech was characteristic and forcible. In parting with Mr. Wilder, the Society has met with a loss. He understood how to keep attention alive, and employed means which his successor may not deem necessary to the end; but great publicity and a little telegraphing are often successful. Mr. Wilder understood the press thoroughly, and without that, such associations dwindle.

HYBRIDIZING THE VINE.—A communication from William N. White, Athens, Georgia, on this subject, came too late for examination this month.

VICTORIA REGIA.—Gold and silver fish, it has been proved, are of great importance to the perfect development of the leaves, by devouring the numerous aphides and insects that often infest their under surfaces. Hundreds of these fishes, therefore, may be annually placed in a tank soon after planting. The introduction of the *Limnaea stagnalis*, or water snail, has also been recommended, as it devours the slimy and mucous matter that always accumulates more or less in the tanks of tropical aquariums, and from experience of their usefulness in a large reservoir which contains some thousands, their introduction, in a sanitary point of view, would be extremely beneficial.

A novelty respecting the Victoria in England, is interesting. It is the cultivation of the plant in the open air at the exotic nursery of the Messrs. Weeks, at Chelsea, where it was grown, and flowered to considerable perfection during the summer of 1857, in an open tank, protected by an awning; not, however, in such a strictly natural state as the words "open air" may imply, for the water of the tank, it appears, was maintained at a temperature of 84° or 85° by a circulation of hot water below it. Still, we are far from being convinced that the plant is capable of being grown in the "open air" in England; and the complete failure, too, this year, of the plants in the marble basins of the greenhouse division of the Crystal Palace, tends even more strongly to confirm the opinion of the utter impossibility of attempting to acclimatize a tropical plant of this description.

Sir William Hooker admits that this plant does better in our tanks in the United States, than at Kew. In Philadelphia, we are much gratified to report the entire success of the new Victoria Regia house, lately erected by James Dundas, Esq., at an expense of some four thousand dollars; such liberality deserves more than a passing notice. Mr. John

Pollock, his intelligent gardener, informs us that flowers bloomed exactly six weeks after planting, from a root in the new tank, which is 24 by 30 feet; the house is extremely well lighted, and the tank is set out with a variety of healthy plants suitable to the scene; the whole presents one of the most beautiful sights that can be created by the art of man. The great Palm-house, too, has a tropical air nowhere else to be seen here. We feel quite proud of having such costly and well-cared for establishments in our midst, and of such gardeners as Mr. Pollock.

NOVELTY is the order of the day. We are to have a ship that will not create nausea, and perhaps a telegraphic cable to America. The horticulturists must not lag behind, and are not disposed to do so. We cut the following from the *London Chronicle*:—

"*A Feat in Cultivation.*—Mr. Richard Corke, of Maidstone, recently laid four wagers that by his system of cultivation he would produce more grapes, melons, cucumbers, strawberries, and vegetable marrows, or in fact any vegetable whatever, than could be done by another in the ordinary way, and won them all easily. These wagers originated in a conversation taking place in the company of several gentlemen, one of whom had presented Mr. Corke with some eyes of grapes and some vegetable marrow seed of fine quality. On making inquiry how they answered, Mr. Corke asserted that the canes of the vines would average more than twenty feet before the year came round, having been potted October 25, 1856, and planted out in a new hothouse just finished building on March 7, 1857. At first Mr. Corke wished to decline the wager, as he told the gentleman he must win to a certainty. Being, however, pressed, he accepted a bet for two rods to average twenty feet. This they considerably exceeded, and at the same time three other bets were made respecting the vegetable marrow, Mr. Epps and Mr. Bunyard, the well-known horticulturists, being appointed to survey and watch progress. The stem of the vegetable marrow was eight inches round; its vine, together with leaves and stems, measured upwards of eight thousand feet, the wager being that Mr. Corke would not produce more than sixteen hundred feet. Upwards of four hundred fruit were cut from this Leviathan marrow plant. This discovery will be made public in a treatise nearly completed. Mr. Corke's plan is so simple that a mere child, after some slight instruction, could produce the same effect."—J. G. LOMAX.

RAPIDITY IN STRIKING.—The *London Florist* says: "The rapidity with which new plants (even those which, a few years since, were considered difficult) are now struck and got ready for sale, is a strong evidence of improvement in this department. The seed trade has kept pace with that of the nursery, and affords proof that the better classes of vegetables are becoming more extensively known."

PRUNING.—The skilful pruner will always have an object in view, and will see at a glance the results of each cut he is about to make. Practice alone can give him this foresight as well as dexterity in the art. It is requisite, also, that he should know how to regulate the energies of his trees, and the means at command to induce fruitfulness, to have the trees in a condition that, while one crop of fruit is coming to maturity, the organization of fruit-buds for the following season is going on; in short, to have the trees in a fit condition from year to year, to produce a crop of fruit. This may be accomplished by timely stopping and thinning the luxuriant shoots during the summer growth, by regulating the crop of fruit, and by root pruning, which is, in some soils, a very important operation; and every fruit grower ought to know quite as much of the root as he does of the branches of his trees. The above applies to trees growing too strong to be fruitful; but, on the other hand, when the trees are feeble from over-cropping, or other causes, close pruning is requisite, together with light crops, and assisting the trees by top dressing, which will have the desired effect.

Training.—The training of trees is in close connection with pruning; the one regulates the form of the tree—the other, the fruiting shoots and spurs. However plain the rules and directions for pruning may be stated, much must be left to the discretion of the operator, and which practice alone can teach. Preserve an equilibrium in the growth of every part of the tree. Be prudent in the use of the knife, and never amputate large branches if it can be avoided; to aim at a medium between excessive growth and feebleness; to remember that to organize fruit buds, every leaf, young shoot, and bud, requires exposure to solar light. Allow nothing to grow except what is required to carry on the proper functions of the tree, furnish bearing shoots, or to extend its branches.

Dioscorea Batatas.—In previous pages will be found a summary of the experiments reported respecting the *Dioscorea*, which will be read with interest. The time is near when the cuttings of the roots should be again planted. We are glad to know that there are some persons who are not discouraged by the trials already made, and we must wait another year before a decided judgment can be entered in the court of public opinion. From England we hear favorable reports. One cultivator has produced specimens weighing ten pounds, grown from strong roots. The French appear to consider the *Dioscorea* very valuable, and it is surely of too much importance to this country to be allowed to fail because interested parties have chosen to make an unnatural noise about it.

THE ENGLISH have been much pleased the past season to find the *Catalpa*, and the *Gleditsia* have ripened their seeds, a rare event in that climate. The *Catalpa* pods were attempted to be passed off at Willis's room for a new kind of kidney bean!

THE VINE IN CONNECTICUT.—A meeting of persons interested in the culture of the grape, and the manufacture of wine, was lately held at Hartford. It was determined to form a vintner's association. Officers were elected, and it was resolved that "there may be as excellent, healthful, high-toned wines produced on our sunny hill-sides as upon those of any other country or State." A convention is to be called.

MOULDY ROOTS.—Attention is now being directed to the condition of the roots of sickly-looking trees, and it is found that much disease exists there which is unsuspected; hence the just remark that you should know as much about the condition of the roots as that of the limbs. A white mycelium often displaces the bark of many of the fibres; the microscope shows that the roots are entirely overrun with delicate, transparent threads which invade the young parts, sometimes forming a white felt, quite concealing the surface. This apparently unintelligible disease is a most dangerous enemy in old cropped grounds, and should be carefully looked after. Probably there will be found a remedy either in sulphur or charcoal.

WHEAT MILDEW was formerly believed to proceed from the common *Berberis*, but Dr. Lindley proves this to be an error.

"**SUBSOIL IRRIGATION** is a tried, lasting, and substantial application of art," says the *Cottage Gardener*, "in perfect unison with nature, in the shape of a system of cultivation which, in connection with agriculture, by means of which the great labor attached to watering gardens may be almost entirely dispensed with." If not too expensive, we agree with the writer, and give his *modus operandi* as follows:—

"In the formation of beds on this system, it will be necessary in the first place to 'dig

out the earth from one to two feet deep, so as to be able to form a bottom nearly water-tight, with sides about four feet six inches high, to prevent the liquid from running over until the earth has been moistened by it. The bottom may be of clay and chalk, or gravel, or lime, or any hard substance rammed; and upon the bottom put one row of half-drain tiles in the centre (that is to say, in the centre of beds three feet in width; or, if six feet, two rows), and loose, not jointed. There is an admission pipe sloping at one end to each rank of drain tiles, and a pipe at the other end of the bed to see when the liquid stands at four inches, and then to stop. The earth is then filled in as before, and proceeded with as in ordinary gardening. Water, or liquid manure, on being poured into the pipes, will pass along the whole length of the beds; and rising through the small spaces between the drain-pipes, partly by the capillary attraction of the mould, and partly by the attractive power of the roots themselves, will feed and nourish the plants.' So writes Mr. Wilkinson, the able promulgator of this new system of cultivation, in his pamphlet on subsoil irrigation; and that it does nourish and greatly increase the size and produce of roots, vegetables, &c., is an undeniable fact; and that it may be applied with equal advantage to the flower garden is sufficiently obvious."

The system is patented in England.

HOUSE CONSERVATORIES AND HEATING.—The reader will be attracted in the present number with the portrait of a small conservatory made in a bay window of our own dining-room at a small cost. With regard to a system of warming a greenhouse or conservatory attached to a house, there ought to be no difficulty in employing a house fire for the purpose. In the case introduced, the heat from the dining-room fire has answered perfectly. Many modes may be adopted according to circumstances. One has just struck us in a foreign journal:—

"A neat little lean-to house was placed against the garden side of a mansion. The floor was some five feet above the furnace that heated the scullery copper; a small flue was made underneath that floor, from the same furnace, and the draught let on or off, by means of dampers, without any bother with additional fireplaces or chimneys."

In another case, "A merchant built a nice residence for himself a few years ago. A neat flower garden was on the east side of the house, communicating by folding doors with the living-room, the floor being about two feet above the level of the garden. He wanted a greenhouse to be easily accessible, and easily managed. It was recommended to have it communicating with the above room, and between it and the flower garden; and to be heated from the kitchen boiler immediately beneath that room. After mature consideration, he placed his greenhouse on the west side of his house, that he might have something attractive on every side; and his plan would have been successful but for the fact that he had an unsuccessful smoke-consuming furnace, instead of passing his smoke out of the lofty chimneys. We have yet much to learn on this subject of warming, and on saving the heat now disseminated to the winds."

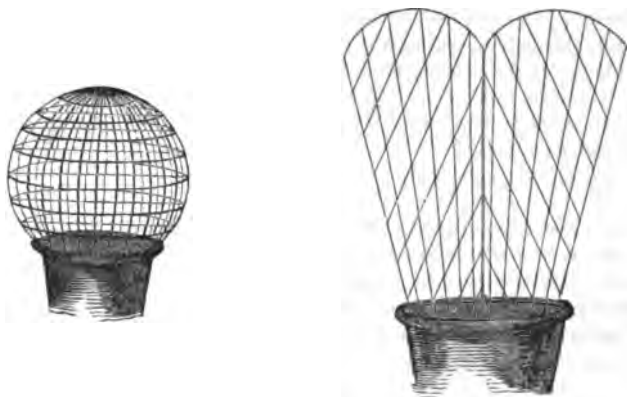
DR. GRAY'S NEW BOOK.—Dr. Asa Gray has issued through his publishers an "Introduction to Structural and Systematic Botany and Vegetable Physiology," being a fifth and revised edition of the *Botanical Text-Book*, illustrated with over 1300 woodcuts. New York, Ivison & Phinney, 1858.

It is designed to furnish classes in the higher seminaries of learning, colleges, and medical schools, as well as private students generally, with a suitable text-book of structural and physiological botany, and is greatly improved both in matter and illustrations; in the chapters much has been entirely rewritten, and such changes made as the advanced state of knowledge required. It has a full glossary, and altogether is an improved and important

addition to the student's library. The teaching of botany is now made so simple and easy, that it is a reproach to persons pretending to education to be ignorant of its features.

TRELLISES, AND WIRE-WORK DESIGNS, of light character, suit well for such climbers as *Maurandia Barclayana*, *Cobea scandens*, *Tropæolums*, and *Fuchsias* of pendent habit.

Trellises fitted to pots, and covered with climbers, make noble window and terrace ornaments. The choice kind of *Tropæolums* are among the best plants for the purpose. To carry them over the entire surface, it is necessary to watch the young shoots as they make progress, and assist them on regularly. Fine lead wire will be found useful in all cases



where creepers have to be led over trellises. The thread-like fingers produce the best effect when trained over the interior of a sphere; but for plants of stouter growth, a flat and somewhat fan-shaped design will be most suitable.

CHINESE AZALEAS.—All the Chinese Azaleas strike freely by cuttings of the young wood, taken off close to the ripened shoots, planted in silver sand, and placed under bell-glasses, in mild bottom heat. As soon as well rooted the young plants may be potted off in good peat soil, mixed with a rather large proportion of silver sand. When in a growing state a little liquid manure is a great assistance to them. They require a light situation in the greenhouse or pit during winter, near the glass. They may be kept in the house until they have bloomed, but must be allowed a partial shade; many will do almost as well out of doors at the south, and all may be brought out as soon as the flower is past, but placed in a sheltered place. If kept in a cold pit through the winter, they should be brought into the house in February or March to flower.

TRANSACTIONS OF THE OHIO POMOLOGICAL SOCIETY.—The eighth session of this society includes two meetings, one at Cincinnati in September last, and one at Columbus in December. The official report makes a pamphlet of sixty-four pages, filled with matter of a suggestive character, and embracing reports from various counties possessing various climates and soils; the inhabitants of each, interested in the topics, will of course possess themselves of the transactions; some recommendations of fruits to be cultivated, &c., we take pleasure in disseminating.

The address of President Ernst is a lucid one, and deserves attention. Alluding to the mildew and rot of the grape, he says the fact that varieties which were healthy and per-

fectured their fruit uniformly, do not do so now is suggestive of something wrong in their treatment, and he asks, "Is not the plant enfeebled in its power to produce fruit by the severe pruning to which it is subjected in our climate?" The valley of the Ohio he considers well adapted to the general culture of fruit, both for soil and climate, shelter, hill and dale, springs and streams, and that there they have, as yet, but few of the insects of the older sections of the Union to contend with, though some of the most mischievous have been imported in the egg, or chrysalis form, with trees, especially the peach worm, bark louse, and others.

Though immense numbers of trees are annually planted, the demand for fruit much more than keeps up with the supply, and prices are on the advance. Nurseries of hundreds of acres each, both here and in Europe, find a ready market for their trees in the great West. One gentleman said that every tree in his nursery fit to go out last fall, was sold in advance, and he was obliged to turn many customers away. There has been a growing feeling in Ohio that the trees brought into the State on the recommendations of their value in other sections, were not adapted as a general thing, to Ohio, and the eastern nurserymen are now turning their attention to the cultivation of varieties known to be valuable in the West.

Peaches.—Cook's Seedling Peach, a very large and beautiful freestone, resembling Crawford's late, ripens a few days earlier, a fine bearer, admirably suited for marketing. The Griffith, a large, yellow flushed kind, and a new seedling promising well, were commended. Carter's Large is a good market variety, a hardy and sure bearer. Other varieties are commented on, but we must refer to the pamphlet.

Grapes.—The Rebecca was received from Dr. Grant, and "although not ripe, the fruit is handsome and good." The Hall Grape, larger and better than Clinton. Berries of medium size, dark color; not equal to Isabella. A supposed seedling grape presented by W. D. Kelly, of Ironton, Ohio, is spoken of without decision. Mr. Negley reported that a German had planted a vineyard near Pittsburg of foreign kinds; the first crop was free from mildew, and Mr. Bateham, the excellent secretary, said it was not uncommon for European grape vines to bear one or two crops of fair fruit, but after the second or third crop the fruit almost invariably mildews.

Pears.—Walker, Jalousie de Fontenay, Andrews, Belle Lucrative, Jackson's Seedling, Kirtland, Summer Bon Chretien, Urbaniste, Flemish Beauty, and a pear from Pittsburg, named by the convention Fort Duquesne, are commended.

Apples.—Maiden's Blush, Carolina Red June, and Hagloe underwent favorable examination; and the opinions advanced in a discussion which took place on the deterioration of the apple fruit, by which many fruit-growers were becoming discouraged, is valuable. Mr. Bateham believes in the necessity of employing fruits of Western or Southern origin, especially of winter varieties. The discussion was closed by a remark from the President, which, while it marks the modesty of the speaker, should serve to stimulate all to continued investigations. He said: "For his own part he could only say that every year's experience only serves to exhibit the more clearly to his own mind how little he already knows in comparison with what remains to be known."

At the Columbus meeting the discussions assumed a very interesting character, and were devoted, in part, to the opinions respecting the value of kinds of fruit in different localities, where our space does not allow us to follow, but are of sufficient importance to receive attention from every newspaper in that fine State.

The Delaware Grape is thus noticed: "Specimens exhibited by Mr. Campbell, of Delaware; kept two months past their season, in very fine condition; the berries a little shrunk and their sweetness increased by evaporation of some of the juice. The bunches had been simply kept in a garret, thinly spread to prevent moulding. Dec. 10th."

In a communication from R. Buchanan, Esq., of Cincinnati, he gives his experience re-

garding the keeping of apples. He found a covering of six or eight inches of hay an excellent protection against severe weather when the thermometer was down to 6° above zero; others covered with a thick quilt were frozen hard, but, by leaving the cover on and keeping the room dark, the apples thawed without apparent injury. Above zero with this treatment he thinks they would be safe covered with eight or ten inches of hay.

The quantity of dried apples exported from Ohio is remarkable. One merchant in Portage County had already purchased *twenty-five tons* at an average price of six and a half cents a pound; and it was estimated that in the valley of Ravenna, with about six stores, there would be purchased last season *one hundred and twenty-five tons of dried apples* at the same average price. Beat this who can; it is equal to the income from a good wine district. From Lake County there was exported the past season \$25,000 worth of green and dried apples; and from Kelly's Island, Erie County, 7,000 pounds of grapes and 3,600 gallons of wine are exported annually!

The report closes with a summary headed

"WHAT HAS BEEN LEARNED.—From an attentive perusal of the foregoing communications (and many more in the office of the State Board of Agriculture), we draw the following inferences:—

"1. That very great loss of fruit trees resulted from the extraordinary winter of 1855-6; nearly all the peach and heart-cherry being destroyed; and in some parts of the State very many apple-trees, but not so general a loss of these as many persons had supposed.

"2. As a general rule, there is not much difference in the *hardiness* of the different varieties of fruits, especially of peaches and sweet cherries; and in regard to apples, the difference is much less than was generally supposed; as many of those reported as tender in one locality, or by one writer, are classed as hardy by others. The principal exceptions seem to be in reference to the Belmont, Rhode Island Greening, E. Spitzenberg, and Roxbury Russet, which are reported as most generally injured by the winter.

"3. The effect of the previous crop had no perceptible influence in rendering the tree liable to injury by the winter; but more was dependent on the condition of the wood as to ripeness; those trees which, from richness and moisture of soil, made a late and luxuriant growth the season previous, were most injured by the winter. For this and other reasons, elevated or hilly lands are found most favorable for apples, as well as peaches and cherries.

"4. The damage to the apple crop by rotting, scab, rust, &c., is not by any means general, but confined mostly to the southwestern quarter of the State, the limestone, clayey soils, and is worst in the rich valleys or plains; but can generally be guarded against by a judicious choice of varieties, and proper pruning and culture.

"5. The varieties of winter apples best adapted for the districts just named are not those generally known and approved in Northern Ohio and in New York, but varieties of Western or Southern origin; as, Rome, Beauty, Rawles' Janette, Smith Apple, Milam, Limber Twig, Wine Sap, White Pippin, White Pearmain, Broadwell, &c. At the same time it is found that the popular Eastern and Northern fruits continue to succeed well in most parts of Northern Ohio, and on the more hilly and sandy lands in the eastern parts of the State.

"From the reports of twenty-five northern counties to the State Board of Agriculture, giving answers to the question, 'Which are considered the best six winter apples in your county?' the votes stand as follows:—

R. I. Greening	20	Roxbury Russet	16
Rambo	18	Baldwin	13
E. Spitzenberg	18	Y. Bellflower	11

"The next in order were Belmont, G. Russet, Canada Red, and Newtown Pippin, from six to ten votes each.

"The reports from the southern half of the State (and western central) were less nume-

rons and more diverse in character, recommending more or less of the southern list first above given, along with a few of the northern, according as the writers were more or less extensively acquainted with varieties."—*Secretary*.

TO PRESERVE WOODEN LABELS.—We know enough of the confusion arising in collections through the loss of labels, when, from want of timely renewal, they decay at bottom. During the past year I set my wits to work to find out a better plan of charring them to render them durable, and, from present experience, I believe I have hit upon a good plan. Before detailing my own way I will just mention that the plan pursued previously, and which I was taught while in a London nursery, was to dip them in melted lead; this did not answer very well, and was often inconvenient. The way I have hit upon is, to my belief, original, and is as follows: Having made the labels, before they are painted get a dish or vessel of any size and suitable depth, say four inches deep, which fill with turpentine. In this you may dip the labels, a handful at a time, immersing them as deep as required, and then take them one by one and apply a light to the point, this will char them well superficially, if properly done, and much more neatly than any other plan I have seen. When so charred they appear to be very durable.—*Jaques*.

PLANTING SHIP TIMBER IN FLORIDA.—A plantation of Live-oak, made by some careful public officer in West Florida, is said to be flourishing finely, and Colonel Claiborne publishes a letter, in which he proposes to establish extensive plantations of this oak on reserved lands in Louisiana. He says the Live-oak grows there with astonishing vigor and rapidity. In seven years from the acorn it forms a beautiful shade. In twenty years it has the tenacity and durability of iron, and is ready for the axe of the ship-carpenter.

THE CHERRY TREE.—In several forms it has been announced that the cherry does not succeed in many western localities, and we have been looking out for some experienced person to give the proper directions and information on the subject. Dr. Kirtland has come to the rescue; in a late *Ohio Cultivator* he contends that it is an established maxim that wherever a chestnut-tree has grown, the cherry and the peach will thrive; he thinks that if some of the Cincinnatians would enter upon the cultivation of the cherry with half the zeal and devotion that hundreds are doing with their vineyards, means would be devised for overcoming the obstacles. They have almost all kinds of soils, exposures, and elevations. On the prairies permanent walls of suitable height would be found a comfort and advantage to every householder, and with this protection, and trenching, and under-draining, with deep borders of soil adapted to the wants of the cherry-tree, he thinks they might possess this beautiful fruit. The walls may be cheaply constructed of limestone, sand, and gravel, according to the directions of Fowler's book. *Shelter* is gradually becoming known as one of the greatest appliances of cultivation. All are convinced that under-drainage is all but essential to fruit culture—with that and shelter we firmly believe fruit can be grown everywhere to advantage.

THE NEW PART, the fifth of the splendid *Flora of Tasmania*, by J. D. Hooker, M. D., F. R. S. (4to. London), completes volume one, terminating with Conifers. The second volume will include Endogens and flowerless plants. It is impossible to conceive anything more admirable than the plates, especially those of the singular genus *Richea*, and of the curious Tasmanian Conifers, to which alone, including *Casuarina*, five plates crowded with details are devoted. The letter-press is, as usual, rich in botanical criticism and elaborate researches into structure and affinity. Works like this will place Australia in a better scientific position than even the mother country.

THE VICTORIA PEAR is so highly eulogized in the *Gardener's Chronicle* as to make it an object to test it here. That periodical says: "It stands in the highest class, the flesh being perfectly melting to the core. We understand, moreover, that it is a very great bearer, it having been necessary to prop up the original tree, in order to prevent the branches breaking under the weight of their crop. Its habit is thorny and very robust. Its season in ordinary years is February."

MR. EDITOR, if we could but reduce the Rose lists! Here are twelve good ones which will suit most: *Général Jacqueminot*, *Prince Léon*, *Lord Raglan*, *Géant*, *Baron Prévost*, *Bourbon Queen*, *Paul Joseph*, *Gloire de Dijon*, *Dupetit Thouars*, *Augusté Mie*, *Souvenir de Malmaison*, and *William Griffiths*. These are free flowerers, hardy, and first rate, and of different colors.

ROSA MALHEUR.

P. S. Why don't you tell your parish of the most beautiful yellow rose extant? It is very scarce, but where is such a rose for the garden or greenhouse as the inimitable yellow Viscomtesse de Cazes?

R. M.

[There is scarcely a better, but the gardeners won't let it be much known because it is so scarce. We were about to recommend it, but Rosa has forestalled us. It is a delicate grower, with a deep orange colored centre, and very superb.—Ed.]

It is to be regretted that Sir William Hooker's very useful *Journal of Botany* has ceased to appear. Under one form or another, the learned author's scientific correspondence has been given to the public ever since the year 1827, and the loss of it will be felt too soon. Nor, indeed, with the exception of the *Journal* of the Linnæan Society, and Taylor's *Annals of Natural History*, does there now remain any English medium through which short papers on systematical botany can be communicated to the public.

Mr. Sowerby's *Grasses of Great Britain* continue to appear with regularity. Part Third contains figures of *Phalaris arundinacea*, *Ammophila arundinacea*, and three *Phleums*. The letter-press fully justifies the favorable account formerly given of it.

PROF. ETTINGHAUSEN has communicated to the Imperial Academy of Sciences of Vienna, a paper on the "Nervation of the Leaves of Celastraceous Plants." In this memoir, the learned author enters minutely into the distribution of veins in leaves, reducing them to certain typical forms, thus applying his principles to a practical purpose. Ten beautifully nature-printed plates of leaves, and many wood-cuts prepared by the same ingenious process, accompany the memoir.

Close upon the number of the *Flore des Serres* for April appears that for May; so that the writer is making up his arrears. The new number contains several excellently drawn florist's flowers belonging to the Rose, the Tree Carnation, Early Tulips, and Hyacinths, together with a representation of the seed-vessel of a Bootean *Rhododendron* called *macrocarpum*, measuring three inches in length. The editor exclaims, What then will the flower be?

GOSSIP.

— In the *Jardin des Plantes*, at Paris, is a sun-dial bearing this inscription: "*Horas non numero nisi serenas*" (I count only the sunny hours)—a pretty and appropriate motto. The merry mortal forgets that even sunny hours are numbered by a shadow!

— It is well to know and remember that iron railings should never be inserted into stone with lead; the action of the atmosphere keeps up a galvanic action between the two

metals, ending soon in destruction. Zinc is better, and paint formed of the oxide of zinc preserves iron exposed to the atmosphere infinitely better than the ordinary paint, composed of oxide of lead. The new mode of immersing iron railings and wire in melted zinc, called galvanising it (which is an erroneous but convenient term), answers a very good purpose.

— The electric light so much talked of lately, was tried on the Thames, to light the workmen employed on the new Westminster Bridge, and with a result that appears fatally objectionable. Its light produces shadows so very black, that the workmen were continually betrayed in their movements, and fell off the stages into the water.

— **ACHIMENES IN BASKETS.**—For the decoration of a stove or conservatory during summer and early autumn, we know of no more useful plants than Achimenes, and if carefully removed to a cool temperature as soon as the blossoms expand, and shaded during bright sunshine, they will remain longer in beauty than in a hot stove. About the beginning of February, put the tubers in pans filled with light, sandy soil, and place in a gentle heat, where they soon vegetate. After shoots are an inch long, they should be carefully removed, selected, and finally planted. Employ square baskets (eighteen inches by six inches), stuffed with sphagnum, the soil within composed of about equal parts of turfy loam, leaf-soil, and decomposed manure, with a liberal admixture of sharp silver sand. The moss being rolled tightly round the rim, keeps in its place by means of wire pegs, the whole being finished off with the shears. Insert the plants two inches apart, water, and remove to a pit with a light, moist atmosphere, where they grow freely. Stop at the second and fourth joints, to secure compact, bushy specimens; after the second stopping, then stake, and the outer row of plants peg close over the rim of the basket. At same time, furnish with a top-dressing of thoroughly decomposed manure mixed with silver sand; after that, with the exception of being regularly tied, they receive the same treatment as before, until such time as they should flower, when they are removed to the conservatory, care being taken to prepare them for the change by rendering it gradual. When all are fully expanded, they will be a complete mass of blossom; in short, floral balls. All varieties are not alike adapted for growing in baskets, but longiflora and its varieties may be used with safety.

— A grand National Rose Exhibition is to be held in London, this spring—the first of its kind. It will afford a fine opportunity for making a selection.

— Lighting mines by gas is now practised in England, where its importance may be inferred from the fact that the estimated cost of oil and tallow burnt in the mines of Great Britain, is two millions and a half of dollars per annum. In one Cornish mine, the expense is thirty-five thousand dollars a year. Gas has been forced down the shaft by pressure—a depth of seven hundred and eighty feet—with entire success to the operation.

ANSWERS TO CORRESPONDENTS.—(D. P. B., College Hill, Ohio.) The most satisfactory mode of forming a plantation for shelter or screens of the kind you mention, is to plant an irregular-formed strip inside the boundary line, varying from ten to forty feet in width, and setting it quite thick with young trees, chiefly evergreens. In the first place, let the ground be well broken up by deep and thorough ploughing, and, if possible, subsoiled. Procure trees of a small size—say from one foot to eighteen inches in height—and plant from three to six feet apart; this will give a satisfactory and speedy growth. The most suitable evergreens for this purpose are the White and Austrian Pines, Norway, Balsam, and Scotch Firs, American Arbor-Vitæ, and Hemlock Spruce. It will be advisable to plant about one-third of the number deciduous trees, such as any of the free-growing Poplars, Maples, Willows, Larch, &c. These can be thinned out as the evergreens grow up.

In planting, set similar kinds in small groups, which will produce a better effect. Of course, the individual beauty of trees cannot be developed by this mode, unless they are carefully thinned out as they increase in size. The advantages of this method of planting

are many; the plants being young, will grow at once with vigor, and they can be procured at a low cost at any of the wholesale nurseries. Without a plan of your grounds, we cannot be more definite. We would, however, advise you (and we would extend the advice to all who are about improving) to prepare a rough plan and description of your place, and inclose it in an envelop addressed to William Saunders, Landscape Gardener, Germantown, Pa., who, by his writings in these pages, and by his operations in various parts of the Union, has shown himself to be a master of his art.

A. MCCLINTOCK wishes to have a hedge of Arbor-Vitæ both *thick* and *high*. This will not be exactly as difficult as the case of the boy who wished to eat his cake and keep it also; but it will require a little *time*. Cut back every June and September, leaving the tops at each clipping a little longer than at the previous one, and in a very few years we can promise you one of the most practicable hedges known to planters; its only disadvantage is, that it is brown in winter. Like all others, it demands regular attention. If one could live a century or so, a hemlock hedge would be a more desirable thing.

APPLE BUDDING.—Will you or some of your correspondents please tell me how it will do to make dwarf apple-trees by budding Paradise apple on standard and then working apple on the Paradise again? I have some now budded with Paradise, and would like to have the advice of some one who has had experience before working good fruit on them.

J. B. R., *California*.

[Have any of our correspondents had any experience? Many thanks for the "Camas" and "Wappatoo" seeds.—Ed. H.]

BERBERIS DARWINII.—*Rustic Adornments*.—(AMATEUR, Watertown.) Small side-shoots of B. Darwinii slipped off with a heel strike best any time in summer, covered with a bell-glass and kept cool. Perhaps you kept your slips too moist, or so damp that they rotted from want of air at times.

CHARLES BRACKETT, Rochester (Indiana), writes as follows: "Inclosed I send seeds of an ornamental vine which, for the past two years, has appeared on the Tippecanoe, eight miles above town. It is a beautiful thing. My attention was called to it by Bart Hamlet, an old pioneer. If you give it a name, let it be named after old Bart, as he is dead now; and I would like to see his name survive him in this beautiful vine which he brought to my notice."

CHARLES BRACKETT."

"P. S.—Bart called it the feather vine. Let Dr. Brincklé try some of the seeds, if convenient.

C. B."

The seeds are those of a well known vine (the *Clematis virginiana*), and yet, being well known, there should be no reason why poor Bart Hamlet should not be forever remembered for calling attention to it:—

"And what so poor a man as Hamlet is
May do, God willing, shall not lack."—*Hamlet*, Act I.

The first player says to Hamlet, "I hope we have reformed that indifferently well," and so we would reform "indifferently well" the nomenclatures of the botanists who, by the way, do not act fairly in giving the names of plants (and pears) to their friends exclusively, else should we have fewer hard words. Griesbreghtii and Wareszewickzii should yield to Ophelia and Hamlettii; and we therefore hereby authorize Mr. Brackett to christen the *Clematis virginiana* with a shorter name, the *Hamlettii*, in memory of "pioneer Bart," dismissing it with two lines from Shakspeare:—

"*Laertes*. Farewell, Ophelia; and remember well
What I have said to you."—*Hamlet*, Act I.

(JAMES TAYLOR.) The ashes of anthracite coal are useful to some fruit-trees, as the cherry

and grape, but not specially to garden crops, except it be to assist in disintegrating the soil. Apply to the trees by top dressing, in the fall, or digging it in in spring. Bituminous coal-ashes contain valuable organic manures for all trees and shrubs, and especially evergreens. Unleached wood-ashes are too strong for most of your garden purposes; leached, they are applied with great advantage to onions, peach-trees, &c., and as a top dressing for grasses, especially clover.

As usual, various inquiries have been received too late for answer the current month.

CATALOGUES, ETC., RECEIVED.—Cherry Hill Nursery, Westchester, Pa., spring of 1858. This circular embraces a long list of the best strawberry plants, priced, and trees, Osage Orange, Silver Maples, &c. &c. Joshua Hoopes, proprietor.

Descriptive Catalogue of Fruit Trees, Evergreens, Roses, &c. &c., at the Columbus Nursery, by M. B. Bateham & Company, 1858. An admirable Catalogue, prepared by one of the best informed nurserymen of the West.

Descriptive Catalogue of Fruits, by A. Fahnestock & Sons, Toledo Nurseries, Ohio, for 1858-59. Every description of fruit that thrives in the climate is here to be found, with directions.

J. M. Thorburn & Co.'s Descriptive Catalogue of Vegetable and Agricultural Seeds, &c., Garden, Field, Fruit, &c., to which large additions have been made, this year, of tested novelties. New York, 1858.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, &c. &c. For sale by Samuel Cofman, at the Spring Grove Nursery, near Carroll, Fairfield County, Ohio, for 1857 and 1858. A very full descriptive catalogue of a large and varied collection, including strawberries and the smaller fruits.

Illustrated Catalogue of Microscopes, &c. &c., for sale by James W. Queen, 924 Chestnut Street, Philadelphia. Mr. Queen has a fine collection of philosophical instruments, spectacles, &c. &c. We have lately examined and tested some of his thermometers, of which he has an extraordinary variety, and found them correct. Mr. Q. has good thermometers as cheap as four dollars the dozen, very neat and handsome; the glass tube is red, which displays the mercury readily to the eye.

VERBENAS.—We are again enabled to commend the annual catalogue of Dexter Snow, of Chicopee, Mass., who first inaugurated the system of devoting his attention to a single speciality. He has introduced the verberna extensively, sending it by mail or express with great success, and, we hope, profit. This spring, Mr. Snow offers even greater facilities than formerly, and enumerates six new varieties as important acquisitions, viz: Madame Abdt, Geant des Batailles, Lady Palmerston, Celestial, Le Gondoller, and Charles Dickens. We advise our friends to inclose a stamp, and procure Mr. Snow's sensible catalogue, in which they will find directions for cultivating this garden favorite.

PEABODY'S PROLIFIC CORN.—A circular setting forth the extreme value of this corn has been received. If Mr. P.'s strawberry, the coming season, equals the picture in the *Patent Office Report*, and elsewhere, we may "acknowledge the corn."

Horticultural Societies.

MICHIGAN STATE HORTICULTURAL SOCIETY.—At a meeting of the Standing Fruit Committee for the examination of seedlings, it was resolved to recommend for trial an apple presented by B. Hathaway, of Little Prairie Ronde, under the name of Pawpaw Seedling.

Description.—Size, medium. Color, red, obscurely striped. Flesh, yellowish, a little coarse, juicy, mild, subacid, sprightly. Quality, "very good."

The following persons contributed specimens of fruit for the examination of the Society : A. C. Hubbard, Detroit ; Jeremiah Stanard, Ionia ; Samuel Johnson, Kalamazoo ; J. T. Wilson, Jackson ; D. McKee, Kalamazoo ; Joshua Clemens, Leoni ; Geo. W. Taylor, Kalamazoo ; B. Hathaway, Little Prairie Ronde ; E. Merrill, Kalamazoo ; T. T. Lyon, Plymouth ; George D. Rice, Kalamazoo ; S. S. Cobb, Kalamazoo ; A. Buell, Kalamazoo.

The thanks of the Society were tendered to the corporation and citizens of Kalamazoo, for the free use of the rooms, tables, fuel, lights, &c., during their sessions. Adjourned.

HEZEKIAH G. WELLS, *President.*

T. T. LYON, *Secretary.*

List of Apples recommended by the Society for General Cultivation.

American Summer Pearmain—Amateur.

Benorie—Market.

Baldwin—All purposes.

Belmont—Do.

Cooper—Market.

Domine—Do.

Early Harvest—All purposes.

" Strawberry—Amateur.

Fameuse—All purposes.

Gravenstein—Do.

Hawthornden—Market.

Hubbardston Nonsuch—All purposes.

Jonathan—Do.

Keswick Codlin—Market.

Late Strawberry—All purposes.

Lady—Amateur.

Maiden's Blush—All purposes.

Pippin, Golden (of Michigan)—All purposes.

Pippin, Fall—All purposes.

Swaar—Do.

Seek-no-further (Westfield)—All purposes.

Spitzenburg (Esopus)—Do.

Spitzenburg (Flushing)—All purposes.

Spy, Northern—Do.

Yellow Bellflower—Do.

Peck's Pleasant—Amateur.

Poume Gris—Do.

Porter—All purposes.

Pearmain (Herefordshire)—Amateur.

Rhode Island Greening—All purposes.

Red Astrachan—Market.

Red Canada—Do.

Rambo—All purposes.

Russett, Golden—Do.

" Roxbury—Market.

Sine Qua Non—Amateur.

Summer Rose—Do.

Summer Queen—Cooking.

" Sweet Paradise—Amateur.

Sweet Bough—All purposes.

Sweeting, Jersey—Do.

" Spiced—Baking.

" Talman—Do.

St. Lawrence—All purposes.

List of Apples that Promise Well.

Beauty of Kent—Cooking.

Duchess of Oldenburg—Market.

Dyer—Amateur.

Fall Wine—Do.

Hawley—All purposes.

Norton's Melon—Amateur.

River—Amateur.

Sweeting, Golden—Stock.

" Bailey—Do.

" Danver's Winter—Do.

" Ladies'—All purposes.

List of Apples unworthy of Cultivation

Gilliflower Black.

" Striped.

" Scalloped.

Alexander.

Twenty-Ounce Pippin.

Pumpkin Sweet.

Romanite.

Cheeseboro' Russet.

Pennock.

Tewksbury Blush.

Recommended for Further Trial.

Green Newtown Pippin.

The Society then discussed and adopted the following resolutions :—

Resolved, That this Society appreciates the horticultural labors of Dr. John A. Warder, and that we look with much interest to his forthcoming work on fruits, and that the President of the Society be requested to send him such specimens of the fruits now on exhibition as he may deem proper, correctly labelled for his inspection.

Resolved, That this Society would strongly urge the necessity and propriety of laying out specimen grounds upon the farm of the State Agricultural College, to be filled up with fruit and ornamental trees, shrubs, and plants, to be used as guides to correct nomenclature, and for the exemplification of the most approved modes of pruning and culture.

Resolved, That this Society adopt as their standard of nomenclature, the recently revised edition of Downing's *Fruits and Fruit-Trees of America*.

Notes for the Month.

MARCH.

VINEYARD CALENDAR.

BY R. BUCHANAN, CINCINNATI, OHIO.

PRUNING the vines should be finished by the middle of this month. If cut at a later period, they would be injured by bleeding, or flowing of the sap. The method of pruning has been given in former articles. The spur and bow system is generally adopted when the vine is trained to a single stake; but, on trellises, the horizontal and bow-shaped training is of course the best. Some of our cultivators are now trying experiments to prevent mildew and rot, by long training, or leaving more wood than formerly. Others have no faith in that remedy for diseases, which they consider mainly atmospheric. Stakes may be driven the latter end of this month, when the frost is out of the ground, and the vines tied to the stakes with willow ties, in soft weather, when the vines are pliable, and will not break by bending. The forenoon is the best part of the day for this purpose.

It would be too soon to plough or hoe the vineyard this month, unless the season should be unusually early, and the ground warm and dry towards the latter end of the month.

THE WINE.—Keep the casks bung full, and the bungs tight. Burn sulphur matches in the empty casks, and drive the bungs in tight. These matches are cotton or paper strips, about an inch wide, saturated with melted brimstone. Two to four inches to each cask, according to its size, will be sufficient. The strip is attached to a wire about a foot long, and, when lighted, held in the cask until consumed, and the bung is then driven in tight.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

The continued open weather has afforded ample opportunities for preparing the soil and forwarding operations for early spring cropping. The value of such crops as Onions, Peas, Parsnips, Potatoes, &c., depends very much upon the period of sowing and planting. Onion seeds sown on the 10th of March have produced a fine crop of large bulbs, when, from seed sown on the 26th of the same month, the produce was only fit for small sets. The potato crop cannot be relied upon unless planted early, and the advantage of eight or ten days in spring is frequently all the difference between failure and success. It is necessary, however, to keep in view that tender crops, such as Lima Beans, Dwarf Beans, Corn, Okra, &c., do not gain by being planted before the soil has attained considerable heat, and the atmospheric temperature warm and settled.

Every auxiliary towards getting the ground in early working condition should therefore be resorted to; such as throwing the surface up in ridges, and, if of a clayey texture, frequently turning it over, that it may be the more thoroughly penetrated by frost; and, it should further be remembered, that working and trampling on adhesive soils while they are wet, will render all previous preparation entirely useless; and it may be well to remind beginners that all permanent and remunerative improvement in tenacious soils must be founded upon a proper system of under-draining.

FLOWER GARDEN.—The flower borders should be forked over (not dry with a spade), and, as the free-growing herbaceous plants soon extend themselves beyond due limits, the plants may be slightly reduced. A dressing of guano, at the rate of 400 lbs. to the acre, will invigorate growth. Hardy herbaceous flowering plants have been much neglected in modern flower gardens. In a future number we may give a list of such as are most desirable. The lawn will also be benefited by an early application of guano, so that the spring rains may dissolve and carry it to the roots of the grasses; this will encourage an early vigorous growth, and, in connection with frequent mowing, will form a close turf, able to withstand the scorching effects of long-continued dry weather.

GREENHOUSE AND CONSERVATORY.—The interior of ornamental plant structures can be much improved in appearance and rendered much more interesting by having graceful festoons of climbing plants depending from the roof. A series of curved iron rods covered with

vines produce an agreeable effect, and break up the usual monotonous internal arrangement of glass houses. Plants for this purpose may be planted out in small prepared borders or beds of soil, but, as a matter of convenience, it is more desirable to plant them in pots or boxes of suitable dimensions, which can be placed in positions where their appearance will not be conspicuous. The limitation of root room is also of advantage in causing a tendency to flower, and diminish the luxuriance of wood growth, which is a constant source of annoyance when the roots have unlimited freedom. There are many hardy climbing plants well adapted for such situations when grown in pots. The *Bignonia Capreolata*, which is rather tender for northern latitudes, is a fine evergreen climber, so is the sweet yellow *Carolina Jasmine*, *Gelsemium nitidum*. The *Akebia quinata*, five-leaved *Akebia*, with clusters of small blue flowers and beautiful foliage, and the Chinese *Wistaria* are also very suitable. Amongst others more strictly requiring greenhouse protection may be mentioned the following: *Ipomea Learii*, and *I. Horsfallii*, *Bignonia Lindleyi*, or *Picta*, as it is named in some collections, *Passiflora alata*, a vigorous grower, *P. racemosa*, *P. Kermsina* and *P. Loudonii*, *Tacsonia manicata*, *Lophospermum Hendersonii*, *Kennedy prostrata*, *K. monophylla*, *K. Marryatta*, and *K. nigricans*, *Sollya heterophylla*, *Tropaeolum Lobbianum* flowering all the winter, *Dolichos lignosus*, *Ecceomocarpus scabra*, and *Brachysema latifolia*. Plants of more tender constitution, and usually grown in hothouses (but which do as well in a greenhouse when attention to watering during winter is given, requiring to be kept very dry, that is, they should receive no more water than sufficient to preserve them from shrivelling during the coldest season), are the following: *Mandevilla suaveolens*, a very choice sweet-scented flowering plant, *Allamanda cathartica*, *Stephanotis floribunda*, *Bignonia venusta*, *Combretum purpurea*, *Hoya carnosa*, and *H. imperialis*, *Schubertia Graveolens*, and *Stigmaphyllon ciliata*. Much of their beauty depends upon the care and skill exercised in training. While no appearance of negligence should be tolerated, still there should appear a natural freedom of growth; this will in some measure be secured by tying in only such shoots as are strong, leaving secondary laterals to hang loosely around. Climbing plants are frequently objected to on account of their harboring insects, and the difficulty of keeping them clean. When this happens they should be pruned severely and the plant thoroughly cleaned, or, which is one of the advantages of having them in pots, they can be substituted by something else.

PLEASURE GROUND AND SHRUBBERY PLANTATIONS.—The repeated failures that have attended the introduction of many new evergreen trees and shrubs is a matter of much discouragement to those who are anxious to give variety to their ornamental grounds. Such trees as the *Cryptomeria Japonica* and *Deodar Cedar* are too tender for this latitude, and, indeed, all to the north of the Potomac. It is true that isolated instances may be found where they stand with slight injury, but that no dependence can be placed in them as permanent trees is shown by the fact that, after growing for several years and attaining a height of ten or twelve feet, they have ultimately succumbed. Evergreen shrubs have suffered the same fate; the *Aucuba Japonica*, English hollies, *Rhododendrons*, &c., have not, as a general feature, made any mark in our pleasure grounds. Still there is no lack of material, and if, as we have frequently recommended, we would plant more liberally of those that are well known to be perfectly hardy, we might, in connection with thick planting, be enabled to succeed with those choice evergreen shrubs that are only found to luxuriate in the shelter of larger growths. The idea of allowing each tree and plant sufficient space for full development is one of the principal errors with inexperienced planters; their lawn is dotted over, and all immediate and ultimate effect destroyed. It may be questioned whether there is not more real beauty in the combination of forms than in individual perfection in trees.

A fine old oak is an object of admiration when standing apart from its fellows, but the varied outline, diversity of foliage, and numerous curves produced by a group, is none the less pleasing. This is a subject that, however tempting, we cannot here more than merely mention. Ornamental plantations should be treated as entirely distinct from the lawn proper. Let a portion of ground be set apart for this purpose, and thoroughly trenched and enriched, then plant very thickly with such well known rapid growing trees as *Norway*, and *Hemlock spruce*, *White Austrian* and *Scotch pines*, *Arbor-vitæ*, *Red cedar*, &c. When they afford a sufficient shelter the margins may then be filled with all the smaller shrubs, omitting that valuable shrub the *Mahonia aquifolia*. A few deciduous undergrowths may also be added. The lawn will then admit of being thoroughly and satisfactorily maintained as a close green turf surface, with here and there an individual tree showing full development. Variety, combined with utility, will then be produced; but the planter must be imbued with the elements of beauty, and his taste cultivated before attempting to produce these pleasing future effects.



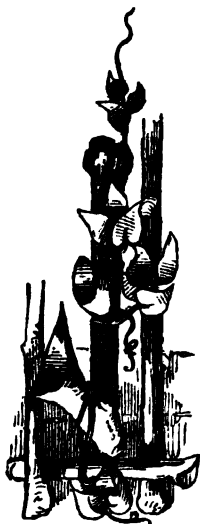
WATSONIA VIRIDIFOLIA Ker VAR. FULGENS

On February 10, 1990, the following information was obtained from the Department of Health, Education and Welfare, Division of Health Statistics, Bureau of the Census, Washington, D.C. 20541:

[illegible]

— i.
— 11:11

Country Life.—Social Intercourse.



IN former numbers, we have given our space to generalities, and touched upon topics universal to all. If we take the country in its realities, we shall have to regret that, generally speaking, the numbers of congenial spirits congregated in one neighborhood are too few to render what is called *society* in cities as sociable and gay as some could wish; there are neighbors matched for intercourse, but we are safe in saying that more frequently than otherwise "people in the country" are too much indisposed to mingle, too little inclined to be sociable, and to bring the true graces of life into assembled groups.

A country is settled often at hap-hazard. Neighbors are brought together not because there is a prospect of sociability, but because of the accident that such a site is vacant, such a farm is for sale; the surroundings in that most important point, who are to be our companions, do not always sufficiently influence the selection of the situation. The divisions which shut men and women out of each other's houses, are so numerous—the variety of education, fortune, religion (to say nothing of tastes), divides poor humans into so many classes—that when you take a country circle, and name the people who by merit or standing *should* be social, you find the reality very much diminishes the happy expectations formed.

One mode in which people of education and leisure enjoy themselves, is in dining together. The beauty of a dinner consists in uniting at one table the refined enjoyments which are enhanced by welcome smiles and good breeding. Talfourd, perhaps, has put this in the best language. It occurs in that beautiful passage in the life of Charles Lamb, where he contrasts the dinners at Holland House, and the evening parties at Lamb's more humble lodgings—both charming things to have known, and yet so different; both pleasing because peopled by agreeable persons. He says of the dinners: "All are assembled for the purpose of enjoyment. The anxieties of the minister, the feverish struggles of the partisan, the silent toils of the artist or critic, are finished for the week; professional and literary jealousies are hushed; sickness, decrepitude, and death, are silently voted shadows; and the brilliant assemblage is prepared to exercise to the highest degree the extraordinary privilege of mortals to live in the knowledge of mortality without its consciousness, and to people the present hour with delights, *as if* a man lived, and laughed, and enjoyed in this world, forever. Every appliance of physical luxury which the most delicate art can supply, attends on each; every faint wish which luxury creates, is anticipated; the noblest and most gracious countenance in the world smiles over the happiness it is diffusing, and redoubles it by cordial invitations and encouraging words, which set the humblest stranger guest at ease."

The entire description is one of those delightful efforts not to be appreciated fully but by those who have been welcomed as expected guests in some house where humanity is greeted as humanity should always be. To remember such scenes, is remembrance of felicity, whether the mansion has been that of a nabob, or the low-ceilinged rooms of Charles Lamb; the welcome the same, the congeniality greater, give us the rooms of the latter, with the wisdom and the pervading spirit of social progress. Could we impress upon this working world the pleasures which well regulated society, whether it assembles at the sumptuous board, or

gathers, at the bidding of the more humble, to a corn-husking or a "Bee," *may* enjoy when it determines so to do, we should lay down our pen contented with the feat.

But country life presents all and more of the obstacles which we have hinted at. Once we were a guest where an attempt was made, by an amiable and hospitable host, to bring together his leisured neighbors, and to form a social dining club, where the members could meet once a week and *be social*. They assembled once, but once only! And why? The dinner was all that a dinner ought to be, and it was enlivened by the good humor and good sense of all present. Why was it not repeated at the houses of the guests? There was no good reason. Perhaps sickness in the next whose term had been fixed, was the cause—indifference, we could scarcely infer—but the affair was dropped, and clever and well informed people, who could see the smoke ascend from each other's chimneys, met so rarely that it was almost painful to meet.

Depend upon it, this is not the state of things which will make the country a desirable residence. People who shut themselves up in solitude—who have no taste for the genial social afternoon and evening—who partake not in the pleasures or sorrows of their fellows—are not neighbors to be sought. In choosing a location to build your earthly mansion, the books tell you all about the advantages of a hill-side, a valley, or a stream; but give us the situation where *social life* is *cultivated* with at least as much eagerness as the farm or the garden, and where the well informed are unselfish enough to surround themselves with that charity which gives a portion of their time to the delights of social intercourse.

Too often—ah! how sadly often—the social position of neighborhoods is broken up by a single error of one or other party. Misunderstandings on trivial matters foreclose for life the pleasant meetings which should occur. We leave this portion of our topic in sorrow for the fact, and with a single quotation:—

"Annoyances and trespasses will be,
Which 'twere as well thou didst not *choose* to see;
By gentle bearing prove thy gentle blood—
Shine, *thou*, the mirror of good neighborhood."

LAYING OUT GARDENS, ETC.

MANY gardens are wholly deficient in any distinctive character, from the fact of their having been designed, or more properly jumbled together piecemeal, without any design whatever. It cannot be denied that such gardens often possess many pleasing features; but, from the incongruity inseparable from such an arrangement, their beauty is, for the most part, neutralized or entirely lost. It is hardly too much to say that nothing truly beautiful, as a whole, ever resulted from chance, and a garden certainly does not form an exception to the rule. Of course, it is not insisted that a design having been once determined on should be adhered to at all hazards; that would be little short of insanity, because many circumstances will often present themselves for consideration in the working of it out which will allow of a modification in the detail with great advantage; but with the principal features there should be no change. Presuming that these will be the result of careful consideration, and be thoroughly adapted to the exigencies of the case, no partial change could possibly be made without destroying the effect of the whole, reducing what would be beauty, order, congruity, to a mere chaos of discordant parts. The beauty of a design arises in a great measure from the harmony of its several parts to the whole.

Yet the great source of pleasure to be derived from a garden must undoubtedly

consist in the variety of its subordinate features, and in the various objects of which they are composed; but there must be design in their arrangement and formation if they are to produce all the pleasure of which they are capable. Variety and intricacy, when subject to order and design, are among the most powerful sources of pleasure to the senses and the mind. "Nothing," says Allison, in his *Essay on Taste*, "is more delightful than in any subject where we at first perceived only confusion to find regularity gradually emerging, and to discover amid the apparent chaos some uniform principle which reconciles the whole. To reduce a number of apparent dissimilar particulars under our general law of resemblance, as it is one of the strongest evidences of the exertion of wisdom and design, so it is also productive of one of the strongest emotions of beauty which design can excite." It is not, of course, to be understood that a garden is at any time to appear chaotic or confused, which is the result of chance; but it certainly should have sufficient intricacy to stimulate curiosity, and variety enough to satisfy that curiosity when excited.

The recognition of one principal feature in the scenery of a garden must not be allowed to produce monotony in the subordinate ones, or to influence their number. Nor indeed need it do so. There is generally some one point, either from the windows of the principal rooms or from some situation near the house, where the garden as a whole should form a pleasing view, and it is to this that especial attention should be given. Supposing the point of view to be elevated, as it should be, above the surface of the garden, as from a terrace, the various parts of which the garden is composed—lawns, shrubberies, single specimens and groups of shrubs or trees, flowers, and garden ornaments—should so combine as to form one pleasing and symmetrical whole. This symmetry need not necessarily be formality or mere uniformity, although it is more than probable that the immediate foreground will be made up of both; but the several parts should so balance each other as to present to the eye a symmetrical and pleasing combination. Every scene or object to be embraced by the eye at one view should possess symmetry, and to be truly beautiful it must be so. Nature is ever teaching us the importance and beauty of symmetry, and the eye, constituted to find pleasure in that quality, in spite of all the abominations in form with which false or perverted tastes have from time to time sought to allure it from its allegiance, remains, and ever must remain, faithful to itself. It may, and often does put on the spectacles of fashion, and, for a time, professes to be charmed with the abortions revealed to it; but of these it discards to-morrow what it professes to admire to-day; and true and faithful to its earliest love, ever returns to it with renewed affection.

Symmetry is not necessarily formality. Both are beautiful in themselves, but they have each their special province, and must not be confounded together.

INSECTS, NO. 5.—ILLUSTRATED.—APHIDIPHAGI.

BY J. STAUFFER, MOUNT JOY, PA.

HAVING, in our last article, considered several species of plant lice, we will now consider those insects known to feed upon the aphids, in three sections. The First, larvæ of coleopterous insects—the Beetle family; in the Second, those of Neuroptera, and also the Ichneumonids, which, however, do not feed, but oviposit upon aphids, and are classed among the Hymenoptera; Section Third, those of dipterous species, or two-winged Flies.

Sect. I. The family Coccinellidæ, comprised of about twelve genera, among which are the Coccinella—perhaps twenty-six species. These are usually of a

red, yellow, or orange ground color, ornamented with black spots, varying in number. Others are black, with white, red, or yellow spots; they are smooth, and very pretty, observed by every child, and called "lady birds." Common among flowers and plants in our gardens.

Figs. 4, 5, 6, and 7, show the perfect insect. Fig. 3, a pupa similar to those of *Chrysomela*, found attached to leaves. Fig. 11, the hatchet-shaped terminal

joint of the maxillary palpi. Fig. 12, the oblong labium and bifid mandible. Fig. 13, the pseudo-three-jointed tarsi. Fig. 10 is a most beautiful insect I have met with—a species of *Cassidæ*, or Tortoise Beetles (?); this had the centre of the thorax and scutellum of a burnished gold color, the centre of the elytra reddish-orange, the external margin of the elytra and thorax of a delicately veined, transparent, pearly border, concealing the head, &c. In the cabinet they lose their brilliancy. Fig. 9 is without spots—perhaps Say's *Coccinella normata*. They are difficult to name; hence, without first comparing those and others in my collection with a well arranged cabinet, I prefer silence. Figs. 1 and 2 are the larvæ, so destructive to aphids that, by placing a few upon an infested plant, they will speedily exterminate them. The parent usually lays her eggs in clusters among the aphids, where they hatch, and find their food at hand.

The perfect insect, and the larvæ, as also some species of *Chrysomela*, emit a viscid, yellow fluid, which, according to Dr. Hirsch, of Vienna, when bruised with the finger, imparts thereto the property of allaying the severest toothache, by simply rubbing the teeth and gums with it. It is deemed an admirable specific, and that the efficacy on the finger lasts for several days. M. V. Audouin states he has observed the union of individuals of opposite colors, but found that the eggs resulting from this union were sterile.

There is another smaller, blackish beetle of this family, usually pubescent, comprising eight-

teen species, known as *Scymnus*, which means a lion's whelp, and the larvæ distinguished from the last by being clothed with tufts of white, down-like hairs. Mr. Harris says they "are as sanguinary and ferocious as the most savage beast of prey," "catching and devouring, with the greatest ease, lice nearly as large as its own body, one after another, in rapid succession, without, apparently, satisfying its hunger, or diminishing its activity!" This reminds one of Paddy's greedy pig, which, after devouring a bucketful of feed, failed to fill the same vessel, head, bristles, and all.

Sect. II. Hemerobiidæ (Lace-winged Flies), remarkable for the golden brilliancy of its prominent eyes (Fig. 7), and the delicate green wings of our *Crysoperla* (Fig. 4). Mr. Harris states that "it *suspends* its eggs in clusters *beneath* the



leaves where plant-lice abound." I have not found any so suspended, but standing erect on the top of the leaf of an apple-tree, on a rather long and delicate stipe (Fig. 8), sometimes in clusters like minute fungi. Figs. 1 and 2, the larvæ; Fig. 1, greatly magnified, is of a dark, purplish-lead color, beautifully ornamented with orange yellow spots; head rather broad in front, yellowish, with two black, longish spots on its middle. The mandibles are long, curved, and pointed, grooved beneath, in which the maxilla are concealed, enabling them to hold and suck their prey. The "jaws are not perforated with a hole," as stated by Mr. Harris; this is a mistaken view of older writers than Mr. H.

By opening excrescences common on the elm, infested by a species of *Erisoma*, I have frequently found this larva in their midst, like a wolf among a flock of sheep, making havoc to their utter extermination. The pupa I have not seen, but copy that of the *Hemerobius merdiger* (Fig. 3) escaping from its net-veined cocoon, about the size of a pea. Such is the case, also, with our species, I infer. Figs. 5 and 6 are two species of minute *Ichneumons*—captured while engaged at ovipositing upon the aphids on the cabbage—called blight, *A. brassica* (Fig. 5), and its wing; this has a brilliant gold bronze thorax and abdomen; the antennæ, short, clavate. The other had long, filiform antennæ. Those, again, have their parasites, a species of *Chalcididæ*; are said to deposit their egg into the maggot of the *Ichneumon* already preying upon the vitals of the *Aphid*, thus producing a maggot within a maggot within so minute a carcass. This reminds one of Mr. Stephen's quaint couplet in his *Illustrations*, vol. vii., which says:—

"Great fleas and little fleas have smaller fleas to bite 'em,
The smaller fleas have lesser fleas—so on, ad infinitum."

Sect. III. Family Syrphidæ. These are gayly colored flies, frequenting flowers, and sporting themselves in rapid motions. Some, like the *Volucella*, often mistaken for *Bombi* themselves, lay their eggs in the nests of *Bombi* and *Vespæ*. Fig. 8, the larvæ. Fig. 9, the plumose antennæ of the fly. Figs. 2, 3, and 4, are those which deposit their eggs in the midst of the aphids. Fig. 1 represents the oddly-shaped larvæ, without legs or eyes; they project their attenuated end, armed with a mouth and triple-darts, and seize upon an aphid, elevate, and suck its juices. A number will speedily rid a plant, strewing the ground with the carcasses of their victims. When ready to undergo their change, they attach themselves by means of a glutinous secretion; when the body contracts and hardens, the pupa is then formed within the skin of the larva. Fig. 5 is the antennæ. Fig. 6, the mouth of the perfect insect.

Much has been written on this subject by men of science—enough to fill a volume—but this must suffice, as it has already become too lengthy. We have now considered the natural means provided. The artificial means to be employed for their destruction, consist in fumigation with sulphur and tobacco, for those in greenhouses, where a moist atmosphere is requisite. By bending over the ends of branches infested, and holding them a few minutes in warm soapsuds, is good. The brine from pickled pork, and the liquid remaining after making hard soap, applied to the roots of hardy plants infested, is good. Scrubbing trees with a stiff brush and a solution of potash in spring; scraping off the loose bark from fruit-trees, down to the ground, uncovering a portion of the roots, and filling the chinks with grafting cement; replacing with fresh earth; or melt equal parts of resin and fish-oil together, and apply it warm with a brush. Syringing with pure water will clear rose bushes from the *A. rosea*. To conclude, I would recommend the reading of, and considering, the 10th and 11th verses of the third chapter of *Malachi*.

HYBRIDIZING THE VINE, ETC.

BY WM. N. WHITE, ATHENS, GEORGIA.

I SHOULD have preferred waiting until it was again in blossom before discussing further the practicability of hybridizing the vine, as, with its floral organs before them, your readers could then decide for themselves as to the difficulty or ease with which it could be effected. But as some interest seems to be felt in the matter, I will state more fully my views, which they can verify, if correct, at that time. Meanwhile, those of them that have access to the article "Botany" in the new edition of the *Encyclopædia Britannica*, or to Gray's *Botanical Text-Book*, can get a very good idea of the structure of the vine blossom from the enlarged figures there given.

That the vine cannot be hybridized, is of course like any other negative proposition, scarcely possible to be proved; and that it is nearly impossible, is nearly as difficult to establish. It will perhaps not be so difficult to make evident, that if Mr. Rogers, as appears from your last issue, has succeeded in this, he has been very fortunate; that if these vines produced (being true hybrids), and set their fruit well, and seed freely, it is remarkable; and should their fruit prove valuable, and they be brought into general cultivation, it will be the first instance of the kind in history, and I for one congratulate him on his success, if he has really succeeded.

The question is not one of *cross-breeding* merely, or the fertilization of one variety by the pollen of another variety of the *same species* (itself a difficult matter in the vine, as I think), but the *intermixture of species* themselves. Whatever success Knight had in his experiments, was not in hybridizing, but in cross-breeding. The only hybrid fruit that I remember, was his almond peach, which was good for nothing.

The controverted point in the report of the Georgia Committee is the observation of Le Conte: "Although, among some families of plants, hybrids occur naturally, or may be formed artificially, yet it is difficult to understand how this can ever be the case in the genus *Vitis*. In forming a hybrid, it is necessary to emasculate the flower we wish to produce fruit, and to impregnate its pistil with the pollen of some other species. This is impossible in the present instance, on account of the minuteness of the flower and its parts of fructification," together with the additional remark of the Committee: "Nor is this all. He might have added another difficulty. The petals are caducous, and cohere at their tips, forming a little cap, which, in the act of falling off whole, draws over from one side or the other, almost invariably, the pollen from its own stamens upon the pistil. The chances then are that the operator on so minute a flower, in the act of removing this cap, and then the stamens, would already have fertilized the pistil before applying the pollen of the species or variety selected. We would not, however, assert that hybridization, naturally or artificially, is absolutely impossible, but *nearly so*," &c.

It is true, this cap is easily removed. Dr. C. W. Grant informs me that he has also found no great difficulty in taking out the stamens, or in applying the pollen, which he has done repeatedly; but the operation succeeded only so far as to render the action of its own pollen abortive. The florets operated upon produced no fruit, and the cause of this sterility lies undoubtedly in the parts of the floret being so minute that he could not remove the stamens without injury to the stigmas. Indeed, the minuteness of the parts may be judged from this: After we had

noticed that the species *rotundifolia* was six-petalled, it required close scrutiny with good eyes to determine whether there were really six stamens or but five, without separating them; and where the eye can scarcely distinguish, it is difficult, certainly, for the hand to manipulate.

Another difficulty in hybridization is, that the blossoms of the foreign grapes (at least with us) open much earlier than our native species; but this is not insuperable, as the pollen may be kept some time.

But, after all, when the whole manipulation has been performed, the pollen applied, and when fertilization follows, there is no certainty that there has been a true cross. Gaertner, the best authority on hybridization as far as observation on experiment could qualify one, says that, in any plant, "the influence of its own pollen is so preponderant over even that of a great mass of foreign pollen, that a microscopic quantity of its own can annihilate that of the other." Again: "The fact" (says De Candolle, *Veg. Physiologie*, p. 705) "which the experiments of Kohlreuter have best demonstrated is, that the smallest quantity of pollen is sufficient for fecundation. Hence arises one of the great difficulties of hybridizing, as when a stigma has been acted upon by its own pollen, it is not susceptible of being fertilized by another species." The same author also states (page 479) that "in many genera, fecundation executes itself in the unexpanded bud, or at the moment of expansion, or in the shelter of certain special integuments, as the cohering petals of the vine." Let it at the same time, in this connection, be remembered that when the stigma of any floret is in a fit state to receive the pollen of another species, its own pollen is also in a fit state to fertilize it. Bearing the above facts in mind, I for one do not feel inclined to change my opinion, already expressed, that "the chances then are that an operation on so minute a flower," or one where the parts are so near each other, "in the act of removing this cap, and then the stamens, would have already fertilized the pistil," &c. Mr. Rogers made his experiments "when the blossoms on the native vine had begun to open;" then "a few clusters were selected on which to operate from those most forward, and nearly ready to open." If the operation was so carefully performed as not to injure the stigma, it is probable that, in any ordinary vine, it would have been self-fertilized; but as, in *this variety*, only from four to eight berries are found ordinarily to set, it is probable he was so fortunate as to happen upon a variety in which the anthers are frequently or generally imperfect in most of the florets, while the stigma was in its normal condition. Such being the case, those in which the anthers were perfect probably did not hybridize, and of course showed the native leaf in the seedling produced, while, with a portion, I am inclined to think a cross of species was effected, especially as the process seems to have been conducted with extraordinary care. There then may have been an exceptional case, but we are confident that every one of the readers of the *Horticulturist* will, after examining the florets of the vine for themselves, agree that it presents unusual obstacles to the hybridizer.

That hybridizing, in general, is of itself no easy matter, we shall show in another article.

A WORD FOR EVERGREENS.

BY THE REV. A. D. GRIDLEY, CLINTON, N. Y.

It is a little remarkable that no more attention is given, in our country, to the planting of evergreens. In England, where the winters are shorter and less severe, this work is pursued with great enthusiasm. Only six or eight species

are indigenous there; yet zealous planters have traversed the globe in quest of new varieties, and have now acclimated in that little island upwards of seventy. Our own country has more native Conifers than any other, and our climate favors the introduction of many from foreign lands; yet these treasures are comparatively unappreciated by us; so that, what has been said, in general, of our indigenous trees and shrubs (that "one must travel to Europe to see the best collections of them"), is unquestionably true of our evergreens. Perhaps their very commonness has something to do with our indifference for them. Perhaps the national character has not yet outlived the wood-chopping era, and still looks upon forest-trees, and evergreens, in particular, as signs of primitive desolation and barbarism.

To some eyes, evergreens have a melancholy aspect, especially so in winter. The harping of the winds through their leaves is to them a sound of wailing. Their branches ermined with snow, are painful reminders of departed summer; the trees seem to have been caught and overpowered by winter, and to struggle pitifully against surrounding horrors and gloom, wholly unable to dissipate them. This feeling, of course, is very much a matter of taste, which reasoning can do little to change. But it may properly be questioned whether the prevailing sadness of the wintry *season* has not been transferred unconsciously, but ungenerously, to the trees themselves, which tend to give that season a look of cheerfulness. Alas! for us, if that which was designed to be a beautiful *compensation* for an admitted evil, is made a sad suggester of the evil itself! We also surmise that this prejudice has arisen chiefly from the sight of the sickly, one-sided specimens of Balsam Fir with which our front yards and our door-yards have so long and so exclusively been planted. One who has seen the rich variety of evergreens now being introduced into cultivated grounds, here and there, can hardly complain of their monotony. The waving plumes of the lordly pines, the aspiring cones of the stately spruces, the dense, browsy masses of the symmetrical arbovitæ, the feathery and pendulous branches of the ever-verdant hemlock, the neat, tapering shafts of the silvery juniper—surely, there is no lack of beauty and variety here.

It will be found true, we think, that those who have no liking for evergreens, are generally the young and frivolous. Deciduous trees are more to their taste, being expressive of lightness and gayety. Thoughtful men, and those of advanced years, prefer the soberer tints and the steadfast verdure of evergreens; yet the foliage of those trees is not so steadfast as to be unvarying. Who has not observed the air of freshness it assumes on the opening of spring? And then, in early summer, the new growth vies in beauty with the foliage of other trees; the pines and spruces sending out soft, yellow tufts—the one shooting upward, the other hanging down, and enlivened with the delicate pink cones of the tree; the firs, with bluish-gray tufts and ascending cones; and the hemlocks, fairest of all, "every finger-tip of their outspread palms thimble with gold, and every tree looking as if all the sunsets that had ever been steeped into its top, were oozing out of it in drops." And besides, who has not observed the pleasing effect which evergreens give to the pale green leaves of deciduous trees in spring? also, the depth of tone which their peculiar forms, colors, and foliage, impart to groups of trees, even in midsummer—an effect which can be gained by no possible combination of deciduous trees; also, the fine background they furnish to flowering shrubs and plants; the richness they add to the kaleidoscope of autumn, and the heightened beauty they give to trees and shrubs which retain their scarlet and crimson berries throughout the winter?

In the view of the writer, one of the strongest arguments for a liberal planting

of conifers about a country residence, is the cheerful air they lend to a home during the spring and autumn. There is a month or six weeks in spring, after the snow has disappeared, before deciduous trees put forth leaves. The grass is green upon the lawn; the early bulbs, and a few other plants, are in blossom; the birds are singing; bees are humming; while yet, the trees are as naked as in winter. Introduce, now, a variety of evergreens on all sides of that lawn, and you give the place a summery look at once. So in the autumn. After deciduous trees have shed their leaves, there is often a period of six weeks or two months when a country place, otherwise desolate, needs only a good supply of evergreens to prolong the season of verdure. Plant the grounds liberally with such trees, keep the grass and walks in good order, and in the hazy light of a warm day in November, we could find perhaps as much enjoyment there as amid all the leafy pomp of summer. We could not, indeed, plant our grounds wholly, nor even chiefly, with evergreens. Trees of this kind should be sufficiently numerous to make the place pleasant, even when other trees are leafless; yet deciduous trees should so abound as to give the premises a new and heightened charm during the vernal season. As among ornamental shrubs, those are the most desirable whose foliage is persistent and fresh throughout the summer, and which take on new attractions when in flower, so a country-place is best planted when it has evergreens sufficient in its composition to make it always cheerful, yet has also deciduous trees enough to give it additional beauty on the opening of summer.

Not the least argument for evergreens is the sense of protection and comfort they afford to a country residence. Here, use and beauty are happily combined, the use itself becoming an element of beauty. The value of evergreens as a protection during the stormy months of the year, can hardly be over-estimated. In all situations, but especially on elevated sites, the winds batter in pieces, and often kill, flowering plants; they nip the buds of fruit-trees, and break down and mutilate choice ornamental trees. Considering that it is chiefly the violence of the winds, and not the severity of the cold that harms our plantations, we see the importance of giving them suitable shelter. Surround a bleak spot with a belt, or with scattered groups of evergreens, and the effect will be at once perceptible. You may then plant the finest trees upon the glade behind them, and they will grow erect and unmarred; the choicest shrubs and most delicate plants will develop all their beauty of leaf and flower; fruit-trees will grow luxuriantly, their blossoms will not be blighted, and their fruit will hang to the stem until it is fit for the planter's use. And would not the presence of a goodly number of such trees prevent the frost from penetrating the ground as deep as it would, if left naked to the winds? Certain it is, that when planted on the exposed sides of dwellings, they protect them sensibly from the blasts of winter, and cheat the cold season of half its dreariness. They may make little difference in the temperature as marked by the thermometer, yet they break the force of the wind, subdue its angry tones, and prevent it from rushing in at every cranny and crevice of the building. They give the premises without a sheltered and warm aspect, even in the severest weather, and make out-door labor and recreation comfortable and pleasant. The quiet, home-like look of such a place, as well as its actual comfort, is a strong argument for the liberal planting of evergreens.

Thus much for the beauty and usefulness of this class of trees. Let us now enumerate, as well as we can, the leading hardy varieties. And here it is in place to remark, that several varieties which were considered hardy, a few years ago, must now be ranked as tender. For example, before they had been fully tested, the Cedar of Lebanon, Deodar Cedar, Himalayan Spruce, *Picea Webbiana*, and *P. cephalonica*, *Torreya taxifolia*, *Araucaria imbricata*, *Cryptomeria japonica*, and

others with still harder names, were classed by sanguine amateurs as "perfectly hardy." Some of them, perhaps, had been sadly frost-bitten, and others killed outright, by the winter; but that was owing merely to some mistake in planting, or to an unsuitable location, or to the severity of the season, or to a want of familiarity with the vicissitudes of our climate—a pardonable fault, surely, in newly-landed foreigners! But somehow or other, those mistakes have continued to be made. The location and soil are only seldom just right; trying, "peculiar," "unprecedented" winters continue to succeed each other, and the natives of warmer countries persist in being pinched by our hyperborean climate. Here and there, a persevering arboriculturist manages, by dint of draining and blanketing, to carry a few shivering, adopted citizens through several winters; but they come out each successive spring with the loss of several limbs, or of their heads, and, after that, their life isn't worth much. All honor to such enterprising planters! They deserve the thanks of their countrymen for their difficult and often costly experiments. We can appreciate somewhat the feelings of those who

"With unsparing hand,
Would cull the beauties of each land,
And blend them in one favored spot."

We are not wholly strangers to the delight of carrying safely through the winter trees indigenous to milder latitudes. "Stolen waters are sweet." And with those who have the means and leisure for this pastime, we can find no fault; but as for calling such trees "hardy," and recommending them for general planting, what sane mind can do it? There *are* hardy evergreens, both native and foreign, and sufficient in variety to satisfy any reasonable taste; those which long experience has proved to be hardy in the latitude of Central New York, and to deserve general recommendation, are chiefly the following, and named in the order of their excellence:—

1. *Norway Spruce*.—We place this first not only because of its beauty, but for its superior hardiness, rapidity of growth, the ease with which it may be transplanted, and the freshness of its color at all seasons of the year. Its foliage is heavier and less rigid than that of its American cousin. Its limbs sometimes take a drooping and graceful sweep, and the shorter side-branches hang down like rich fringes or tresses, in an exceedingly pleasing manner. It is a beautiful tree when young, every year improves it, and, in old age, it is truly venerable. It makes an excellent lawn-tree, and answers well for groups, and belts, and hedges. It is fast becoming a popular rival of the old-fashioned Balsam Fir.*

2. *The Hemlock*.—This tree is more impatient of removal than the last-mentioned, is slower in growth, and though perfectly hardy, the extremities of its twigs are sometimes slightly damaged by the winter winds. Otherwise, it deserves the first place on our list. Its foliage is dense, yet feathery and graceful, and retains its color fresh throughout the year. Whatever charges of stiffness and monotony may be brought against other evergreens, none can be sustained against this. Its branches do not shoot out stiff like rods from the trunk, but each one has a slender and flexible termination, even the central and highest shaft bending over at the top, and giving the whole tree an air of graceful and modest beauty. Perhaps the most favorable condition for viewing this tree is when its branches are wreathed with newly-fallen snow, or jewelled with drops of dew or rain. We wonder not

* "It has added not a little to our interest in the Norway Spruce to learn, of late, that fossils of it have been found in the rocks of a by-gone age. It would seem that it was too good a tree to perish altogether with the Northern mammoth, hippopotamus and rhinoceros, which once roamed beneath its branches."—*Testimony of the Rocks*, p. 153.

at the fond enthusiasm with which the poet Willis writes of the hemlocks around his mountain home. Speaking of this tree in its spring dress, he says: "Of all Nature's renewals, I think this is the fairest. The old foliage forms such an effective contrast for the new. The child-blossom and his predecessor are heightening graces, each to the other—neither so beautiful alone, and both finding room enough, and enjoying the same summer together. Parent and child are one glory. The home-tree was not stripped and deserted for the new-comer. Of that most precious of our wayside religions—the homestead-hallowing—it seems to me that the Hemlock should be the chosen emblem." A historian tells us that when Xerxes first beheld the oriental plane-tree, he halted his army "to admire its pulchritude and procerity, and became so fond of it, that, spoiling both himself, his wives, and great persons, of all their jewels, he covered it with gold, gems, necklaces, scarfs, bracelets, and infinite riches; * * * and when he was forced to part with it, he caused the figure of it to be stamped on a medal of gold, which he continually wore about him." Would Xerxes have done less on first seeing the Hemlock? No "far-fetched and dear-bought" tree equals this. It is suitable for any place or purpose. For a lawn, nothing can be more refined and elegant; it groups well with itself and with other trees; it makes a compact screen and hedge, being improved by an occasional shearing. It is one of the best trees for cemeteries (for private lots, especially), because of its unchanging verdure, and because it can be kept, by pruning, within the smallest compass. If transplanted on a misty day in spring, with a ball of earth about the roots, there is no difficulty in removing it. After planting, the roots should be mulched with leaves, tan-bark, or flat stones.

3. *The White Pine*.—This native tree (sometimes called Weymouth Pine) is superior to any known foreign variety. *Pinus excelsa*, of the Himmalay Mountains, rivals it in many respects, but is proving itself less hardy at the North than was expected. The White Pine is a stately tree, hardy, easily transplanted; its leaves a deep, rich green, arranged in heavy silken plumes, which, when swayed by the wind, have almost the freedom and grace of deciduous foliage. Its balsamic fragrance is a pleasant odor, and is thought to possess medicinal properties. The slightest motion of the wind through the branches produces a silvery murmur, which a poetical mind might say is the echo of a storm at sea, roaring around a brother pine, the mast

"Of some tall admiral."

It retains its greenness throughout the winter. It is too large a tree for small premises; its most appropriate place is in extensive parks, and on the outskirts of cultivated grounds.

4. *Scotch and Austrian Pines*.—We place these together, because they are similar in habit and merit, though, perhaps, the Scotch is preferable of the two, on account of the pleasant blue tinge of its foliage. The Austrian is a noble, dark, sea-green tree, almost sombre, yet so grand and bold in its out-spreading branches as to command universal admiration. In these last respects, *Pinus ponderosa* (a new-comer from the mountains of Oregon) bids fair to outstrip it; but it has not yet been fully tested.

5. *Balsam Fir*.—This time-honored tree deserves this rank, both for its real merits and for the associations connected with it. Hardiness, ease in transplanting, peculiarity of color, symmetry of form, the persistency of its verdure throughout the year—all combine to recommend it. It is specially suited to small grounds. No tree forms a finer contrast with others. When mingled with deciduous trees, it shoots up its dark spires among their lighter spray in a most picturesque man-

ner; and even in winter, its effect among leafless trees is quite pleasing. The objections made to it are, confessedly, somewhat formidable. It is stiff and prim, and, in old age, becomes lean and shabby. But is it stiffer than the European Silver Fir which seeks to supplant it? If set in a deep, generous soil, it retains its good looks for twenty years or more; and a tree which holds its own for a generation, is not to be despised. When it has outlived its beauty, it can easily be displaced for a younger and better. It has been so long planted by the doorstep of cottage and mansion as to become a household tree, and it should not be hastily set aside. The European Silver Fir, though an exceedingly neat and symmetrical tree, and one which grows old more gracefully than the Balsam, can hardly be relied on at the North. Good specimens are occasionally seen in the latitude of Newburgh, on the Hudson, but it often loses its leader in winter, even as far south as Pennsylvania.

[When young, it does so, though not as a rule. When established, we have found it uniformly hardy, and remember what a beauty it will become at the time the Balsam is utterly unsightly, and must be removed.—ED.]

6. *Black and White Spruce*.—The White is not very common, but good specimens, well grown, are hardly inferior to the Norway Spruce. One in the grounds of the late Mr. Downing, is the admiration of every visitor. The Black Spruce is more abundant, and, as generally seen, has smaller branches and thinner foliage than its Norwegian relative. It makes an excellent leader in a group of other trees. Its numerous pendulous cones are not the least of its attractions.

7. *Siberian Arbor-Vitæ*.—This resembles the American variety, but its foliage is denser, darker, and becomes less browned in winter. Its hardness is evinced by its origin. It is one of the best trees "for general purposes." As an ornamental screen, it ranks next to the Hemlock. Its slow growth recommends it for planting in small yards and in cemeteries. [It is unfortunately yet expensive, but must ultimately be our evergreen hedge-tree.—ED.]

8. *American Arbor-Vitæ*.—Here comes the servant of all work—the tree which makes itself so generally useful. A child can transplant it. It is not fastidious about soils or exposure; nay, if any delicate brother tree shrinks from the north wind, it willingly shelters and nurses it. If promoted to a conspicuous place, it bears its honors well, and takes on as courtly a grace (at least, during the gay season) as most of its associates.

9. *The Junipers*.—Of these, the common American and Swedish are the most desirable. They are small, pyramidal trees, seldom reaching higher than twenty or thirty feet. The branches are sometimes loose and straggling—at others, compact and upright. The foliage is a silvery green, with a slight bluish tinge. By occasionally tying-in the branches, and giving them a little pruning, the tree is made to resemble, in form, a miniature Poplar. The Junipers are somewhat formal in their habit, but, in shape and color, they strongly contrast with other trees, and when set near buildings or other artificial objects, their effect is quite pleasing. Aside from their lively color, they make appropriate trees for cemetery lots.

The *Red Cedar* is not a tree of the highest excellence, but deserves a place in large collections. It varies much in form and color, being sometimes dense and conical—at others, open and spreading; sometimes a dark grass-green—at others, with a tinge of blue. The chief defects of this tree are its rusty hue in winter, its liability to lose its lower branches, and to become shabby on the side exposed to violent winds. Planted in a sheltered situation, and on soil congenial to it, it often becomes a very handsome object.

There are other hardy evergreens, of undoubted excellence, which might be

noticed here, had we sufficient space; such as the Corsican, Cembrian, Dwarf, and Sabinian Pines, Cracovian Juniper (*Picea pichta*), the American Yew, and others; but those already mentioned embrace, in our judgment, the cream of the catalogue. If these are arranged with skill, and well cultivated, they will give to a plantation as great variety as can reasonably be desired.

A good deal has been said of late respecting the importance of evergreen shrubs. Amateurs have cried out: "Oh, for the Hollies, Laurels, and Rhododendrons of England!" Such shrubs would certainly add much to the beauty of our home-scenes in the fall and spring; but what could we do with broad-leaved shrubs in midwinter, with the snow two or three feet upon them? Would they not be demolished? And has not Providence wisely limited such shrubs almost wholly to regions where but little snow falls, or caused them to grow where they will be sheltered by the thick overhanging boughs of trees?

In conclusion, we beg leave to offer a few words of exhortation. Dear friends, plant evergreens for their beauty and their use, and plant those only which are of undoubted hardiness and excellence. Plant them not in the autumn, to be lashed about by the winter winds before they have become established, but in the spring, in cloudy weather, and when they are just beginning to make their first growth. Take pains to give them kindly soil, and then to mulch the roots. If carelessly transplanted, they *ought* to die. Choose small, vigorous trees rather than large ones. Let Dr. Johnson growl as he may about "the frightful interval between the seed and the timber." Plant a few choice specimens singly upon the lawn, with their lower branches resting upon the sod, and their unbroken foliage sweeping upward, and floating outward in queenly grace and freedom. Plant some in groups and masses, and so dispose them as to secure depth and richness of color in contrast with lighter shades, always avoiding, however, too great dissimilarity of form. Plant the larger and coarser varieties for outposts and guards, to check the roystering winds, and the smaller for screens and thickets, to hide disagreeable objects, and to conceal pleasant prospects in advance. By all means, avoid a common and very great fault of planters, viz: setting trees so near to roads and walks that, in a few years, they overspread them, and have to be cut down or be badly mutilated. Study carefully the capacities of every tree before planting it. "*In bello, non licet bis errari*," and this is equally true in planting evergreens. Have you a passion for evergreen shrubbery? Then, try your hand first with the Mahonia, American Yew, Yucca, Ink-berry bush, Box-tree, and Evergreen Thorn, planting them in the shade of other trees, and if you succeed with these, add the native Holly, Laurel, and Rhododendrons, to your list.*

And finally, let not your work end with *planting* trees and shrubs. Feed them from year to year with generous food, that they make a vigorous growth, and always wear the bright hues of health. And in the words (slightly altered) of an old planter: "What joy may you have in seeing the success of your labors while you live, and in leaving behind you, to your heirs or successors, such a work that, many years after your death, shall record your love to your country? And the rather, when you consider to what length of time your work is like to last."

* The American Holly grows wild as far north as New Jersey and Massachusetts; the Laurel (*Kalmia latifolia*) abounds in Connecticut, and the Rhododendron *marimum* is found in New York, New Hampshire, and Maine. [By Ink-berry bush, our author doubtless means *Prinos glaber*.—Ed.]

THE HARTFORD PROLIFIC GRAPE AND BOSTON PEAR.

BY GUNDON W. RUSSELL, HARTFORD, CONNECTICUT.

ABOUT six years since I sent to *Hovey's Magazine* an account of the Hartford Prolific Grape; it may be found in No. CCVII. page 114. At the time it was thought to be too modest a statement by those who were acquainted with the Grape; but as it is not a common fault to underrate a new fruit upon its introduction, it may be pardoned in this instance. I write you now to say that the experience of subsequent years has impressed me more favorably with its good qualities. I have never pretended, nor has any one else who is acquainted with it, and able to judge, that it is superior to the Isabella, for it is not; but it approaches to it in quality, and ripening, as it does, two or three weeks earlier. It is a very valuable variety for those localities where the Isabella does not ripen; and it is also valuable anywhere for those who desire this fruit in succession.

If it has any fault it is that the berry does not adhere to the stem with as much tenacity as some other varieties. I have not known it to drop from the vine before maturing, or when mature, but from the cluster some time after it has been picked.

In the history which I gave of this variety I stated that it was an accidental seedling in the garden of Mr. Paphro Steele, of this town. A number of vines came up together, and were allowed to fruit; all were so inferior except this, that they were destroyed; they were supposed to be destroyed, but one of the worthless ones remained. This fact I did not learn when I obtained the materials for its history, and was not aware that two different vines had ever been sold for the Hartford Prolific until about three years since, when I saw, at an exhibition of the Rhode Island Horticultural Society, at Providence, a collection of grapes labelled "Steele's Seedling"—which name has sometimes been applied to the Prolific—but so unlike in quality that when I returned home I made further and more thorough inquiries of Mr. Steele. I was satisfied that in a few instances, when first brought into notice, one of the inferior seedlings had been sold for the true Hartford Prolific, not by design, but by mistake, and possibly this will account for the slowness of unbelief of some in this variety.

From some experiments which have been made I am inclined to think that this will prove valuable as a wine grape; it certainly is deserving of consideration for this purpose.

Those persons who class the Hartford Prolific with the Northern Muscadine, Charter Oak, or common Fox, are either blinded by prejudice or interest, or don't know any better; that is all.

The Boston Pear.—I suppose you have heard of the Boston Pear; those who gave five dollars apiece for these trees undoubtedly have. Well, it is nothing more than the "Pinneo," a seedling which originated in the eastern part of this State a hundred years since. I have compared the fruit and trees of the Boston and Pinneo together, and am satisfied of their identity; and so are many others here, who saw them both last September. I gave an account of the origin of the Pinneo to the editor of the *Homestead*, which he tells me he sent to you. I hear from Boston that Mr. Hovey has promised to give a statement when he procured the scions.

LONICERA ANGUSTIFOLIA.

RAISED from seeds received from Captain William Munro, from the North of India.

A slender deciduous shrub, with narrow lanceolate ciliated leaves, and small pale yellow flowers, growing in pairs at the end of a slender drooping peduncle, shorter than the leaf to which it is axillary.

This plant grows about four or five feet high in any good garden soil, and is easily increased by cuttings. It flowers in April and May; and is not only a distinct, but rather neat-looking plant. Where a choice collection of hardy shrubs is grown it deserves a place.—(*Horticultural Society's Journal*.)



NEW GRAPES, ETC., IN ENGLAND.

The Muscat Hamburg Grape.—A beautiful portrait of this great fruit appears in the last *London Florist*, with the following description: "This fine grape is a seedling, raised at Wrest Park, Bedfordshire, by Mr. Seward Snow, whose great experience and skill in the cultivation of fruits, are well known to our readers. Mr. Snow informs us that this grape originated by fertilizing flowers of the Black Hamburg vine with those of the White Muscat of Alexandria; and that one of the seedlings from this crossing is the subject of our plate. We believe it was named the Muscat Hamburg by the Pomological Society, which name very correctly describes its character, for it will at once be obvious to our readers, on examining the plate, that there is a great resemblance to the Hamburg in form

of bunch and berry, as we understand there is also in its habit of growth and earliness; and that its other parent (the Muscat) has imparted that peculiar musky aroma found only in that variety, and which, hitherto, has been confined to white grapes alone. We can justly congratulate Mr. Snow in having been so fortunate as to originate so noble a grape, and one likely to prove so valuable."

We conclude the notice of this grape by extracting a description of it from a circular sent us by A. Henderson & Co., of the Edgeware Road, who, it appears, hold the English stock of it; see, also, advertisements.

"Mr. Snow has been successful in the production of a Black Hamburgh Grape, with the flavor of the Muscat, having amongst its good qualities the hardy constitution of its parent, the Black Hamburgh. It ripens, and that to the highest state of perfection, in an ordinary peach-house; it is very short-jointed, and a most abundant bearer. The bunches are large and handsome, with fine shoulders. The shape of the berry varies even in the same bunch, sometimes round like the Hamburgh, to oval, like the Muscat. The flesh is melting, and remarkably rich in flavor, fully charged with the aroma of the Muscat, and with an unusually high perfume."

The Trentham Black is another new introduction from Mr. Fleming, of Trent-ham, with a medium-sized bunch, and oval berry. The flavor is very rich, and vinous. It is said to be a good keeper. Mr. Duncan, of Basing Park, who has an excellent reputation, has also two new varieties, of which report speaks well.

Then there is Lady Doune's Seedling (a late black grape), producing fine bunches and oval berries, with a firm flesh, and moderately vinous; hangs well, and will probably supersede the Barbarossa.

OTHER NEW FRUITS IN ENGLAND.—"Apples.—Cox's Orange Pippin proved last year to be the best apple in England of the old varieties. Among new kinds, the following are among the best: Taylor's Seedling and Lord Raglan as kitchen sorts; Frogmore Nonpareil for table or kitchen.

"*Peaches.*—The Salway is a new late peach, belonging to the yellow-fleshed varieties. This sort will keep till November, and is then very rich and melting; it is a valuable kind. The Desse is another late, melting peach, hanging nearly as long as the above, and of a good size. The true Bourdine is also a very desirable late peach, ripening after the Late Admirable. The above three and the true Catherine (if it can be got) should be grown in orchard-houses, or within glass walls, when fruit fit for table might be had through November. Vineuse de Fromentin and Pucelle de Malines are two rather new middle season peaches; and the Early York and Scott's Early Red (American varieties), two early peaches, which may be added to collections as valuable. The Walburton Admirable is also an excellent late peach, and not so well known as it deserves. We have nothing to report of nectarines, further than to recommend the Hardwick and Downton, two useful hardy kinds, to those who are not growing them; also the Murray and Vermash, which are excellent varieties. The Oldenburg is a new kind, which we hope fully to prove next season.

"*Plums.*—We incline to the opinion that there is still wanting a better flavored plum than the Reine Claude, or Greengage, which has retained its superiority for centuries. The three seedling plums, Angelina Burdett, Standard of England, and Woolston Gage, raised by Mr. Dowling, of Southampton, and figured in our volume for 1858, do not prove to be any improvement on our older varieties. The Jefferson is an American Plum, latterly brought into notice; it proves to be a good kind, either for pots or out-door culture.

"*Apricots.*—There are no very new kinds of this fruit. The Kaisha is a sort worth growing. The Frogmore Seedling is also rather a new sort; the fruit

closely resembles the Moor Park, both in appearance and quality, but it ripens later than that old favorite variety.

Figs.—This fruit has undergone but little change for ages. The Brown Ischia, Lee's Perpetual, and White Marseilles, still rank among the best.

"Of new *Pears*, their name is 'Legion;' the difficulty is to select those which are improvements. Climate, season, soil, and mode of training, affect the size and quality of pears very much. Matthews' Eliza is a new seedling. The following have proved good this last season: Poire Pêche is an excellent kind, ripening in September; Brudnell's Seedling is an early pear, ripening about the same time as the preceding; it is of rich, sugary quality, but soon decays when ripe; the Bergamot Seckel is a hardy variety, possessing the qualities of the Seckel with the advantage of larger size; Sabine d'Hiver promises to be one of the best new late pears; Seaton Seedling is a small November Pear, of excellent quality; Conseiller de la Cour and Triomphe de Jodoigne, are two large, handsome continental sorts, of recent introduction, and are of first-rate quality; Beurré Clairgeau and Hitton's Seedling are large and showy pears."

WATSONIA IRIDIFOLIA—VAR. FULGENS.*

Iridææ.

FROM THE FLORE DES SERRES.

IF the great number of floral colors was not an acknowledged fact among many of the Iridææ, the plant here represented could hardly be considered a simple variety of *Gladiolus iridifolius* of Jacquin. Although the type of this tribe appears pale and dull, with flowers of a grayish-blue, still, the plant before us is adorned with such rich vermilion orange, that it well deserves the epithet of *fulgens*.

All the *Watsonias* are originally from the Cape of Good Hope. They have often been confounded with the genus *Gladiolus*, from which they only differ by slight shades, such as greater regularity in the form of the perianth, and particularly the cleft stigmas, with uniform divisions, instead of being simple and spread. Two of the prettiest species are the *Watsonia meriana* and the *Watsonia aletroides*, both of a bright rose color. The *Watsonia iridifolia* surpasses them in size, and rivals them in beauty; it somewhat resembles sword grass. Its stem, furnished towards the base with from four to seven ensiform leaves, rises a compact shaft, of three or six feet in height. The shaft greatly exceeds the leaves; it is often simple, but sometimes divided in vigorous specimens. The flowers are wanting in fragrance. The flowering begins in September, and continues more than a month. This beautiful species is too rare in collections.

Culture.—Let amateurs ignore the innumerable amount of forms and varied color which the flowers of the bulbs of the Cape and similar countries offer! How many persons attached for many years to certain kinds of culture, wearied with forms well known to them, are delighted at the sight of these *Amaryllidacææ*, *Liliacææ*, *Iridacææ*, which they enjoy for the first time! Why is it they are so opposed to common things? Who has not cultivated *Crocuses*, this little, welcome flower of the spring? Well, the generality of bulbs scarcely offer any more difficulty in the culture, with only this simple difference: that the bulbs from the Cape need the protection of glass from continued rain and snow! And as to the frost, the shutters above the glass protect them from that, with the help of a little manure during the coldest weather.

* See Frontispiece.

To amateurs who would wish to try the culture of the Cape of Good Hope bulbs, we will say: A hollowed square flat, of about a foot in depth, formed of two tiers of common, and one of fresh earth, furnished below with a thick bed of rubbish, of pebbles, etc., in order to facilitate the running away of water, is encircled with a box, which is surrounded with old straw or tan, to prevent the frost from penetrating it. At the beginning of October, you plant the bulbs firmly, according to the relative height of the plants, from three, four, to five inches in depth. Rest the frames on the box, and during the winter keep out dampness, giving them air whenever the temperature will allow it, and cover them up with manure or straw when there is a threatening of frost. By the first days of spring, all the bulbs (of which many have started in winter) are in full vegetation. At this period, air it extensively if you can, but cover it up when the rain comes. At last, the frost entirely gone, you can carry away the box, and in this way the flat square makes the ordinary garden soil, with a very pleasing effect.

After the flowering, if it is not wanted to go to seed, cut off the useless peduncle, and, consequently, the withered flowers; set the bulb upright, and separate the sprouts from it, and keep both of them in a very dry place, to replant them, as we have said, in the month of October.

The seed plot is made in the autumn or spring, in a well drained spot, with compost of sifted earth. The second year, the plant can be settled, and the greater part of the young plants will begin to flourish from this time. The sprouts may be treated precisely as the parent.

THE ILLUSTRATIONS OF THE OLD FRUIT-BOOK.



We have more than once alluded to the quaint old book of Lawson, which has been successfully reprinted at the publication office of this work, and is now in the hands of many of our readers. But as some may not have had access to the cuts, we copy a few to give piquancy to our pages. It must be remembered that the work bears date 1626. At page 28, the author says:—

"And needful is a stoole on the top of a ladder, of eight or more rounds, with two backe feet, whereupon you may safely and easefully stand to graffe, to dresse, and to gather fruit, thus formed. The feet may



be fast wedged in, but the ladder must hang loose, with two bands of iron."

This is quite a comfortable stool, though it does look a little *shaky*!

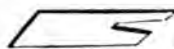
Grafting.—"To be short in this point, cut your graft, in any sort or fashion, two inches long, and ioynе him cleanly and close to any other sprig of any tree in the latter end of time of grafting, when sap is somewhat rife, and in all probabilitie they will close and thrine: thus:



The Sprig.



The Graft.



The Twig.



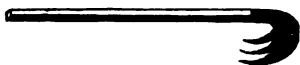
The Graft.

or any other fashion you thinke good."

"Inoculating is an eye or bud, taken barke and all from one tree, and placed in the roome of another eye or bud of another, cut both of one compasse, and there bound. This must be done in summer, when the sap is proud.

"Much like unto this is that they call grafting in the scutchion. They differ thus: That here you must take an eye with his leafe, or (in mine opinion) a bud with his leaues, and place them on another tree, in a plaine (for so they teach). The place or barke where you must set it, must be thus cut with a sharpe knife, and the barke grafts and sets also, being set for bloomes. **H** raised with a wedge, and then the eye or bud put in, and so bound up. I cannot denie but such may grow. And your bud, if he take, will flowre and beare fruit that yeere: as some If these two kindes thrive, they reforme but a spray, and an undergrowth. Thus you may place Roses on Thornes, and Cherries on Apples. Many write much more of grafting, but to small purpose."

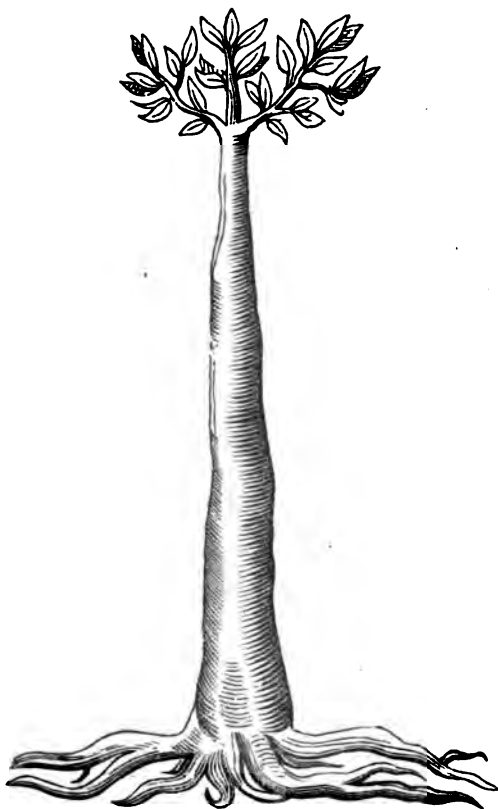
Your under-gardeners must labor to keep down weeds, "with a skrapple of iron thus



formed, for netties and ground-ivy after a showre."

Trimming is illustrated in the fashion of the adjoining cut, which might be given as the style in vogue with the city trimmers, to make a long pole, but little shade. This mode is recommended to make good *timber*. The author says:—

"How many Forests and Woods, wherein you shall haue for one lively thriving tree, foure (nay sometimes twenty foure) euill thriving, rotten and dying trees, euen while they liue? And in stead of trees thousands of bushes and shrubbes. What rottennesse? what hollownesse? what dead armes? withered tops? curtailed trunks? what loads of mosses? drouping boughes? and dying branches shall you see euery where? And those that like in this sort are in a manner all unprofitable boughes, cankered armes, crooked, little and short boales: what an infinite number of bushes, shrubs, and skrogs of hazels, thornes, and other profitable wood, which might be brought by dressing to become great and goodly Trees. Consider now the cause: The lesser wood hath beene spoiled with carelesse, vnskillfull, and vntimely stowing, and much also of the great wood. The



Imagine the root to be spred farre wider.

greater Trees at the first rising haue filled and ouer-loaden themselves with a number of wastfull boughes and suckers, which haue not only drawne the sappe from the boale, but also haue made it knottie, and themselves and the boale mossie for want of dressing, whereas if in the prime of growth they had beene taken away close, all but one top (according to this patterne) and cleane by the bulke, the strength of all the Sap should haue gone to the bulke, and so he would haue recouered and couered his knots, and haue put forth a faire, long and streight body (as you see) for timber profitable, huge great of bulke, and of infinite last.

"If all timber Trees were such (will some say) how should we haue crooked wood for wheelles, coorbs, &c.

"Answ. Dresse all you can, and there will be enough crooked for those vses.

"More than this, in most places, they grow so thicke, that neither themselves, nor earth, nor any thing vnder or neere them can thrise, nor sunne, nor raine, nor aire can doe them, nor any thing neere or vnder them any profit or comfort."

THE PATENT OFFICE.—AGRICULTURAL DEPARTMENT.

BY AGRICOLA.

It is well known that, for some years past, efforts have been made by prominent agriculturists in various sections of the Union, and especially by the United States Agricultural Society, which holds its annual convention at Washington, to direct attention to the utility of a NATIONAL AGRICULTURAL DEPARTMENT—its head a cabinet officer, with power and position co-ordinate with the other Secretaries. There is, it must be admitted, some propriety in the scheme, inasmuch as the rural interest is supreme, and the tillers of the soil greater in number and wealth than all others combined; hence it could be only necessary for them to unite on the measure to carry it into effective operation. Why, then, it may be asked, is it not accomplished? Perhaps a sufficient answer may be found in the fact, there is fear—well founded fear—lest it get into the hands of politicians. Its head not selected because of his fitness for the post, but in recompense for services on the stump; not in extracting stumps, for to that extent his claim might be legitimate, and his aids appointed through favoritism and personal friendship, without regard to their capacity. Such has unhappily been the result of many a well intentioned effort; and if the Agricultural Department were established, it would be a miracle, indeed, did it escape. I had read of the agricultural division of the Patent Office, and, when last in Washington, strolled towards the structure which bears that name—a noble pile of marble, its *façade* equal to one of our city squares, its Grecian portico almost rivalling the Parthenon. I rejoiced that American inventors were so much honored in the edifice; they have done, and are doing, their share towards the civilization and refinement of all mankind; and the arts of peace have been more potent to elevate American character abroad than the triumphs of war. McCormick has surpassed Scott, and that is no slight praise. But I am digressing. I was about to lead you, Mr. Editor, to the agricultural division of the Patent Office. Where, sir, do you imagine I found the department which represented at Washington our country's leading interest? Shall I write it down? In a dingy, dismal corner of the rear basement, with just light enough to make the gloom more gloomy—the official a clerk unknown to agriculture, but not "unknown to fame."

When the "agricultural division," as it is called, was made (one hardly knows how, for it would seem to have sprung into existence self-created), and a person

was appointed, charged with the duty of procuring and distributing seeds, a favorable opportunity presented to test the practical working of an inchoate scheme. The appropriations made by Congress were ample, and met with scarcely a dissentient voice. But, alas! how are the best intentions made abortive by an erroneous step!—a false move at chess endangers the game—and the appointment of an incompetent person to procure seeds, has frustrated the well-intentioned efforts of the friends of agriculture. It may be said that an official duly qualified for the post, is not readily obtained. True, there are difficulties in the way. The incumbent should be one practically acquainted with agriculture in its various subdivisions. He should be possessed of some botanical knowledge; have at least a smattering of chemistry as applied to agriculture; not ignorant of the products of other lands, especially with reference to the numerous plants which, either simply or combined, are used in manufactures, the arts, and sciences. Such knowledge would qualify him to judge of the probable advantage of their introduction to our country, and his investigations would enable him to point out the latitude and character of the soil in which success was probable, together with the mode of culture which experience had determined as the best.

Mr. Editor, here is a wide field with "ample room and verge enough," and had a clerk of proper qualifications been selected, much might have been accomplished; the harvest was indeed plentiful, and the means to meet expenses ample. We should not then have seen seeds from warm latitudes distributed in the North, and English grain and esculent vegetable seeds, of varieties familiar to every kitchen garden in our country, scattered broadcast, *whilst the same identical sorts, of American growth, were being exported to the British possessions, more esteemed there than those obtained from England!* Hyacinth roots, such as are sold at auction in every seaport, and nearly every city in the Union, would not then have been imported, packed in tin cases, and dispatched by the mails, as an exploit worthy of the Patent Office! We should not then have seen tens of thousands of dollars expended in the wretched compilation known as the "Agricultural Report of Patent Office," which no man well informed in rural affairs would venture to send abroad, so shamefully does it misrepresent the actual agricultural condition and intelligence of our country. Verily, we are a patient people, to be content to "pay the piper" for such execrable music. Mr. Editor, has not our faithful sentinel, the *Horticulturist*, a word to say on this unvarnished exposé, and shameless perversion of the public funds?

AGRICOLA.

[Beyond all question, the subject should be investigated. A letter writer from Washington asserts that all the common garden seeds planted for ten miles round that capital, are procured from the Patent Office gratuitously, and that, in many instances, poultry is fattened on corn and wheat obtained in like manner. We have ourselves seen boxes and bags of seeds going a begging from the same source, and to get rid of the stuff sent in kindness by Washington habitues, in over abundance, it has been fed to pleasure horses! But what shall we think of long scarlet raddish seed, early York cabbage, and mignonette! to say nothing of turnip seeds *imported*, though originating here, and given away in over-doses to all who know the secret of the public *crib-bing*. It is surely a misapplication of the appropriation, and needs reform. What a melancholy thing it is to find the best intentioned schemes fail from incompetent management. We were about to take notice of some errors in the last *Report* which would indeed make us ashamed to meet it abroad, when this communication came to hand, and we must wait. Our correspondent might well have made some remarks on the injustice of gratuitously distributing English seeds, such as our own people are engaged in producing with great success.—ED. H.]

A TRIP TO CUBA AND THE SOUTHERN STATES, NO. 11.
CONCLUSION.

TIME began to be valuable, and leaving the hospitalities of Natchez, we descended the Mississippi, to join the remnant of our large party, and make our way homewards. The Princess, with another and an agreeable set of people, returned us safely, after an absence of a week.

New Orleans has been well described as a vast cotton fair, attended by representatives from all the cotton-consuming world during winter, and abandoned to the few residents who remain in summer. As most who come here to make money leave it as soon as they have accomplished their ends, there is too little public spirit, and few improvements that demand concert of action, or which are not absolute necessities, can be carried through. Its commerce is immense. The prophecies of its declension *may* prove true, but none who ascend its river from the Delta, passing another and another fine ship in constant succession, or who view the shipping along its wharves receiving their vast cargoes, can believe in its sudden decline. Railroads may, and do, divert the produce from certain former tributaries, but new land is every day broken up, and bales of cotton every year come to hand from some newly cultivated district; railroads may exercise a great influence in preventing the enormous increase of the city once anticipated, but its growth is still certain.

The French part of the town presents some curious differences from our stereotyped mode of building cities; a foreign air pervades it, but it is without interest after the first survey. The dead level of the site diminishes its beauty, and all picturesqueness is destroyed. Bad smells are not as prevalent as might be expected, the water of the river being let in to wash the gutters daily; mosquitoes in April, however, prove a great annoyance to us who scarcely ever have them at home, even in the warmest season.

We found Mobile in a complete turmoil with a parade of the firemen; and after a hospitable day with the celebrated and scientific Dr. Nott, took the new steamboat St. Nicholas for Montgomery, Alabama—the head of navigation, where the travel joins the system of Georgia railroads. Our boat was furnished with a machine called a “Calliope,” to make music by steam! It was “performed” by a negro at the principal stopping places, and became a serious nuisance with its harsh and most discordant notes. Strange to say, it was, however, a most popular piece of grinding; for, generally, we found ladies and gentlemen waiting for a tune, and the negroes assembled, with their ebony skins and white teeth fully exposed.

We had a North Carolina giant on board—a huge, ungainly fellow—who was anxious to “employ” somebody to exhibit him, but was unsuccessful in finding a Barnum.

The Alabama, though so useful a river, is a very uninteresting one; it is a river of the fourth class. Till it descends into the rich bottoms of the Gulf of Mexico, it flows through the hilly region of the State, and is navigable only at high water. The valleys are clothed with a dense and luxuriant vegetation, to which the giant creepers and the palmetto give a semitropical character. The constant appearance of the Spanish moss, with its long, gray, shaggy, withered-looking growth,

gives a melancholy deadness to the scene, as you thread your way through the stream, winding and turning sufficiently to more than double the distance you wish to conquer. The forest descends to the banks of the river, and it is no uncommon thing for the overhanging branches to brush the deck of the steamer. In one or two instances, the limbs took hold of the bell, and rang a loud peal. The boat rarely stops; when it does, it pokes its nose into a high bank; boxes, bags of corn, and a few barrels of pork, are rolled out into the sand or mud, as it happens to be dry or wet, the owner, with his gang of negroes, taking them up the hill with difficulty, and at his leisure. Sand banks form between the different voyages; a skeleton of a steamboat may now and then be seen left upon one of these.

The ascent of the river presents the most melancholy scene. Life, there is almost none, if we except the vegetation. Once in a day you may pass a steamboat, but as to other navigation or sailing, pleasure parties, or even a ferry-boat of any importance, all is silent; the few settlements on high bluffs present nothing attractive, and look like melancholy storehouses. The inhabitants reside back from the river, where it is more healthy; scarcely a habitation presented itself for three hundred miles. These sylvan solitudes are interspersed with swamps; these are traversed by channels cutting the inhabitants off from each other, and the whole appearance of things is that of solitude brooding over unhealthy nature; dampness pervades the lowlands, and it is curious to see the puny efforts of man trying to reclaim here and there a little cotton land—all this in a country which has been called settled for half a century.

As we ascend, our Calliope startles the woods; we approach a landing, to take in wood; scows are ready loaded, the engine stops till these are fastened on each side, and, as we proceed up stream, the fuel is hastily piled upon our lower deck, the empty scows are let go, and they return with the current to their former moorings, to load for the next customer. If the landing is at a farm-house or a store, all the big and little negroes, with a few white children, range themselves on the heights above us, and dance to our half-savage music, the notes of which are about as discordant as those of a sledge-hammer. As we stop at some of the high bluffs, there are long steps of wood descending to our level, and occasionally a sort of railway, worked by a horse on the hill, pulls up or lets down the solitary individual who descends to see if there is any pork or corn to his address. We saw no mails or newspapers go ashore; these are conveyed in stages, &c. The railroad from Mobile to Montgomery is slowly creeping along, and, when completed, will convey passengers in one day, instead of three or four.

The skill required to navigate a river such as this, must be very great. In the dark nights it must be almost impossible; if a low stage of water is added, it seems utterly impracticable. We were assured there was plenty of water by all parties, but, before reaching Montgomery, apprehensions were entertained that we might get aground. These apprehensions were not without cause, for we touched bottom often, and long poles were in the hands of the men, to lift us over. A fair rate of speed is kept up, even in the thick darkness, and were it not for the indifference to danger manifested by the habitués and the hands of the boat, a Northern traveller would feel alarm.

As soon as dinner or tea is over, all the passengers group themselves on the sides of the boat to smoke or chat. The big and little negroes assemble to dance, or lie about and play some simple game of cards.

The scene is so monotonous, that a good sleeper has the advantage over the wakeful, who, if nothing better offers, looks on at the game of cards, played, to all appearance without money, the laws of Alabama being extremely stringent

on this subject. Every player is at the mercy of any informer, and the rules of the boat, unlike those on the Mississippi, do not allow of any gambling.

Bales of hay and sacks of corn, with now and then a box of claret, or barrels of pork or salt, were delivered here and there, and once a child's bathing-tub went ashore with a gentleman, who was met by his servant, to carry his coat, and the light tub was left to be sent for.

Sometimes a reach of peculiar colored wall of mud was seen rising fifteen feet from the water, as regularly formed as if made by art, and both ends well defined, having the precise appearance of the walls of a garden; and the garden itself was well represented by shrubs and trees, intermingled with the wild azalea, in white and red festoons. The cottonwood was the prevailing tree; the dogwood in blossom; the long-leaved pine and the pecan occasionally enlivened the solitary scene. As we approached Montgomery, the buckeye became common. The weather was bleak and chilly (April 12), though all the trees were in full leaf. Montgomery is a fine Southern town, but it was too wet for much exploration, and, on the 13th, we started for Atlanta, Georgia, through glorious hedges of the Cherokee Rose, in bloom, trees in leaf, &c. Before night there was no green thing to be seen; we were on the higher grounds, and we saw no vegetation till we reached Augusta, a short stay on a Georgia plantation being our only experience of Georgia life.

Augusta has great merits as a winter residence, but our limits are reached, and we do not deem a railroad tour to Philadelphia of sufficient interest to record. We reached home on the 19th of April, and encountered the rigors of a Northern winter for some time thereafter.

NATURE'S GREATNESS IN SMALL THINGS.

FROM HOUSEHOLD WORDS.

To the imagination of man, magnitude presents itself as one of the noblest and most impressive attributes with which material objects are clothed. The colossal grandeur of the Alps, amid the wonders of nature, or of the Pyramids among the master-pieces of art, affects the sensuous nature of the beholder with unmingled reverence and awe. But the refined intelligence seeks for a higher standard of value than size can afford. Sense bows before the majesty of sublime proportion; reason first seeks to investigate all the relations of material things, and, in the end, exalts to the highest place those which a searching test has declared to possess the loftiest significance. Not unfrequently it is seen that forms the most minute are most essential. They were the Titanic forces and grander features of nature which evoked the admiration and the worship of the earliest tribes of men. As we descend along the stream of time, we may discover a growing perception of the greatness of small things; the marvellous power of minor organisms to work immeasurable changes, and the exquisite beauty of minute structures.

Many centuries ago, thoughtful men foreshadowed the full expression of this ripening truth, and anticipated the results of modern science in a profound axiom—*tota natura in minimis*—in smallest things is nature greatest. It was reserved for this century to develop a saying of the schools into a household precept. This age has cast down barriers that walled round the human vision, and has spread out before us a whole universe of created things, of which no man knew before our time. We see now, by the aid of the microscope, that greatness has no existence but as composed of infinite littleness. Who that bowed before the oak could have thought the lord of the forest to be a compound mass of many millions of

independent organisms, of which thousands are combined within an acorn? Who that looked upon the mountain chains of Western Asia, or the white cliffs of Dover, could surmise that they were the handiwork of infusorial animalcules, whose shells make up the mass in numbers of thirty millions to a cubic inch? These are the revelations of the microscope.

Gifted with this new power, the naturalist has traversed the material universe as though armed with a magician's wand; and beneath all diverse shapes, amid all various structures, he has found one simple and invariable unit, the beginning of all form; the first and main element of attenuated organisms. It is the organic cell. The loftiest trees have bowed their heads, and confessed this strange secret of their structure.* The stubborn rock has not withheld the same tale of antediluvian lore. The highest animal and the lowest plant have narrated the self-imprinted story of their birth. Flowers have whispered it—the rustling leaves have breathed it. The butterfly has borne it on the dust of its wings, the fish upon its scales. It is written in the blood that circulates in our veins—it is imprinted on the muscle which gives motion, and the bones which afford support to our frame. All nature testifies to it. One secret that is the key of all shapely beauty or deformed ugliness—a hidden unity amidst all variety—a common type for every form. One word which all creation perpetually utters; a witness to the one source whence all derives.

The waters teem with dissimilar forms of life. The air is darkened with inhabitants, not one of which has its exact counterpart. The mind actually shrinks from the contemplation of endless dissimilarity, and apparently inharmonious difference. What a chasm gapes between the shape and function of the stately old chestnut-tree of Etna, whom time has not subdued and age has not withered, and the ephemeral fungus that springs up to-day, flowers to-morrow, and dies ere another sun has visited it! A wider interval appears between the noble form of man himself and the green mould that clothes his tomb. But the microscope resolves this complexity, and bridges easily this chasm. It resolves them alive into simplest elements, and finds beneath all the same type of creation. It shows always, at the foundation, that common origin in cell-growth which binds all created things in one sublime connection; and proclaims a common law of growth, and a pervading fiat of creative power as vice-regent over organic nature.

It was our own distinguished countryman, Robert Brown, who initiated the observations whose fruitful results have led to the perception of this universal law. But not until the researches of Schleiden, in 1837, was any useful generalization obtained. The efforts of naturalists had, before that time, been chiefly directed towards the perception of differences and the creation of species. But Schleiden saw that the philosophy of nature was darkened by our ignorance of the laws of natural development; and bravely devoting himself to the patient study of growth, and the laws which control it, he travelled through a tangled forest of prickly and entwined facts, till at last he saw the light, and could proclaim it. He watched the secret processes of plants, traced them in their reproduction and their birth, analyzed their structures, and observed the process of their functional activities.

At the end of a long course of labor, he was able to tell the world that, as the minor organisms, which are the lowliest members of the vegetable kingdom, are each in themselves an individual cell, having life and activity, nutrition and reproduction, so the highest plants are only congeries of such individuals, heaped one upon another, moulded into a thousand shapes, and adapted to different purposes. It was then that he enunciated the principle that the life-story of a plant is to be

* See *Household Words*, Volume the Eighth, pages 354 and 483.

studied through the vital history of its composing cell-elements; and, proclaiming the microscopic vegetable cell as the unit of vegetable creation, exalted it to the place of honor among the objects of microscopic research. It was no small thing that this key to the cabinet of vegetable physiology should be so discovered, and placed in our hands; but his researches led to yet another result—for Schwann proceeded to apply to the animal world the same method of inquiry which Schleiden had inaugurated among plants; and, at the close of two years, he made known, in his turn, the sublime truth that the law of formation and reproduction which prevails in the vegetable rules also over the animal creation. He showed that the scheme is the same, and the cells still the primordial element of being. Bones, cartilages, muscles, nerves, and every tissue were traced to their origin in cell-growth. Man himself appears as a congeries of cells; his growth the expression of the sum of their growth; the vital processes of his body carried on by cell-action; secretion, absorption, exhalation, nutrition, chemical change, and vital change; so many names which only indicate phases in the history of cell-life, that epitome of all organic life. These splendid researches were the result of observations made with very imperfect and inoffensive instruments; they should encourage the poorest and simplest student of microscopic nature to think and to examine for himself. They should inspire an abiding faith in the noble simplicity of the innermost mysteries of nature, and the power of the human intellect to master the difficulties of all mere material problems in the exercise of its heaven-descended reason. Greatly should the microscopist rejoice to find in his favorite instrument a facile power of unveiling these high secrets. The most inexpensive microscope gives him the power to interrogate all surrounding objects on this head, and to draw from them the confession of their obedience to cell-power. Sitting in the poorest room, even on the dullest day, he may cut a chip from the floor, take a leaf from a flower, a thread from the carpet, a hair from the chair, a fragment from his food, a coal-chip from the fire, or a drop of blood from the finger, and they will all speak to him in this same language. Their variety will show up a higher uniformity, their complexity a simple cellular unit. Their multiform shapes will betray one common type. Uttering many voices, they sing one grace and canticle of the same purport; the vastness and variety of the results produced by modifications of the same unvarying means; the universality of cell-power; the pervading existence of cell-growth, the million development of its resources, its shapes, its functions, its labors, and its value.

This high law of unity stretches yet further. It has other applications, and has found other as illustrious exponents. While Schleiden and Schwann were working humbly in their vocation amid the mysteries of structure in far parts of Germany, our own countryman, Owen, was studying the law of form here in the heart of London. The one was busied with his microscope and his needles, searching into the tissues of plants, questioning their stem, their fibres, and their pollen; the other, arranging ill-smelling bones, dissecting neglected carcasses of wasted creatures, scorning nothing that once had life, and still possessed organization—making light of labor when it promised a new fact, or a fresh illustration—looking for order amidst confusion—waiting for light in the darkness. At either end of the web, patient workers were unravelling the plaited thread of science; each followed a widely separate clue, but in the end, as they held fast to the right, their paths have met, and they stand, centrally amidst the toiling, scattered crowd of scientific laborers, the apostles of a great truth.

What Schleiden had done for structural anatomy, Owen did for the anatomy of form. The man, the bird, the reptile, and the fish, the uncouth saurian, and the strange griffin of pre-Adamite times, seemed to be separated by as wide an interval

as any that distinguished the structure of the lichen from that of the palm-tree. But, the secret once fathomed, and the type established, their visible connection is read off from them as from Nature's own primer. Owen has demonstrated, to the satisfaction of the world, that, by changes of one form alone, the archetypal vertebra, all world-wide varieties have been effected. This is the key of the mammoth frame—it is the secret of the shape of the fishy tribe. Those are expanded vertebræ which inclose the brain of man; they are vertebral appendages which wall round his heart—which afford levers of action for the arms—which supply bases of support, and cavities of protection for the organs of motion and sense, so multiform and variously endowed. The paddle of the seal, the wing of the bird, and the fin of the fish are new forms of the same element. Thus it is, that truth harmonizes with truth, and law combines with law.

This grand demonstration of unity in creation is a new bulwark to religion. The proofs of design have long been a potent weapon of defence, and an earnest source of delight in the hands of rational and religious men. But there were many things in nature which it failed to explain. What of intelligent and economic design could be traced in the half dozen bones hidden beneath the skin of the seal's flapper? Those joints were useless, and those pieces unavailing. A solid, single-hinged mass was apparently far more to the purpose than this difficult complexity of unused joints. We begin now to see that the apparent anomalies bear reference to economy of type, and not of instrument. They wear the livery of archetypal servitude, they are the servants of a double wisdom.

Thus, beyond and above the law of design in creation, stands the law of unity of type, and unity of structure. No function so various, no labor so rude, so elaborate, so dissimilar, but this cell can build up the instrument, and this model prescribes the limits of its shape. Through all creation, the microscope detects the handwriting of oneness of power and of ordinance. It has become the instrument of a new revelation in science, and speaks clearly to the soul as to the mind of man.

THE DELAWARE GRAPE.—IS IT THE TRAMINER?

BY A. THOMSON, DELAWARE, OHIO.



WHEN the grape now known as the *Delaware* was first brought to the notice of horticulturists (some ten or twelve years since), it was supposed, from what could be learned of its history, that it was a foreign variety; and with the view of having its identity fixed, specimens of the fruit were sent to a number of gentlemen in various sections of the country, regarded as authority in such matters, including the veteran pomologist of Cincinnati, Mr. Nicholas Longworth. Mr. L. did not, from his own personal knowledge, express an opinion as to *what* it was, or whether native or foreign; but some German vine-dressers in his employ declared it to be the *Traminer*, a celebrated wine grape of the Rhine. Others were equally positive that it was the *Red Resling*, also a well known German grape of high repute; but the weight of testimony favoring the *Traminer* side of the question, the decision that it was that variety was formally announced, and generally acquiesced in, though the only proof of its being correctly named was that afforded by the resemblance the fruit was thought to bear to some recollected to have been seen and tasted years before

in "Faderland," by the Teutonic laborers referred to, and they, too, *were divided in opinion* as to what it really was. Unsatisfactory as such evidence might seem, it was, at the time, in the absence of anything to the contrary, regarded as conclusive, and the grape accordingly went forth as the veritable Traminer, and as such found its way into at least two fruit books, with "Delaware" and numerous European cognomens appended as synonyms; and orders for the Delaware, in some instances, were filled by sending out the Traminer, much to the injury of the reputation of the genuine article. Having had considerable experience with foreign vines, and finding them uniformly tender, very subject to mildew, and entirely unsuited to our soil and climate, and several years' experience showing the Delaware to be directly the reverse of all this, I began to doubt the correctness of the decision above noted, and this doubt was increased on hearing of several instances in which efforts to grow the Traminer (received for the Delaware) had signally failed. I therefore determined to investigate the matter further, and with that view again sent specimens of the fruit to numerous distinguished horticulturists who had not before seen it, none of whom recognized it as any variety with which they were acquainted, and a number of them declared most positively, from their own knowledge, that it was neither the Traminer nor Red Resling. About the same time, I embraced the opportunity afforded by a visit to the Atlantic States to call at several extensive commercial gardens, at two of which I found the Traminer growing, and at one of them a vine of the Delaware, also, which I had furnished myself. An intelligent young German in attendance assured me he was perfectly familiar with the Traminer previous to emigrating to this country, and that there was no doubt about the vines there shown me as that variety being true to name; and he agreed with me that it bore no resemblance to the Delaware in wood or foliage. Since that time, the vines have been very generally disseminated. The fruit has been seen and tasted by the best judges the country affords, including many intelligent foreigners, and while none hesitate to bear testimony to its excellence, I know of no instance in which any one has claimed to recognize it as the Traminer or any other known variety. In saying emphatically it is *not the Traminer*, I am fully sustained by Dr. Warder, and all other Cincinnati horticulturists whom I have heard express an opinion on the subject within the last five years; and I do not think it can be shown that Mr. Longworth has at any time positively asserted it is that variety, or even intimated that it was, except upon the strength of the opinion advanced by his vine dressers. Indeed, in letters received from him within the past few weeks, he does not claim that he knows what it is, but admits directly the reverse, and expresses a desire for facts by which to remove his doubts as to whether it is a native or foreigner.

These remarks are elicited by observing that the editor of a journal issued in your vicinity—himself an avowed admirer of the fruit—asserts, in a late number of his paper, that in the brief communication from Mr. Longworth on the subject of the Delaware Grape, in the February number of the *Horticulturist*, that gentleman has *condemned* the Delaware, and says "it is the Traminer." With all due deference, I respectfully submit that Mr. Longworth, in that article, *does not* either "condemn" the Delaware, or say "it is" the Traminer. The readers of your journal have access to the article, and are quite competent to judge for themselves. I leave them to decide whether or not I am right.

It is an easy thing to assert that a fruit is or is not a certain variety; but, to *intelligent* horticulturists, it would be far more satisfactory to have it proven, and as a few years are sufficient to place the matter beyond doubt (and in this case no evidence has been adduced to establish the Traminer theory, though at least ten years have elapsed since it was first promulgated, on exceedingly doubtful

authority), I think it is high time it were abandoned. It is very desirable to have all errors in nomenclature corrected, and I suggest to gentlemen (if any such there be) who are dissatisfied with the present designation, that they push their explorations into some *new* channel, and if they succeed in developing anything new or desirable in reference to it, no one will rejoice at their success more than myself. I repeat, however, that the claim that it is the Traminer—so long persisted in, on such shallow foundation—should be urged no further.

But if not the Traminer, what is it? This question I cannot answer. The facts connected with its early history would warrant the inference that it is a foreign variety, but all experience tends to upset that theory. My own decided opinion is, that it is an accidental seedling, originating in a garden where foreign vines were growing, and possibly of foreign parentage; and the latest and most reliable information I have been able to obtain, favors the conclusion that when the original vine was brought to this country, it was probably the only one of its kind then in existence. What it is, however, is of comparatively little consequence. The important questions are, is it a superior fruit? is it hardy? productive? suited to our soil and climate? To the first question, no judge of fruit who has had an opportunity of tasting it will hesitate to respond in the affirmative; for, in quality, it is universally conceded that, among hardy grapes, it has but a single peer, and no superior. That it may safely be called productive, is remarkably exempt from every species of mildew or blight, and is perfectly at home in our gardens, will, I fancy, be admitted by all who are familiar with it; and though somewhat difficult to get under way, and not by any means as rampant a grower as some of our natives, when most thoroughly established, with kindly treatment (and no vine manifests more readily than this its appreciation of generous nourishment), I think the most skeptical will become satisfied that delicacy of habit and feebleness of growth are not inherent or chronic defects, but, on the contrary, its normal condition is that of a robust, healthy, and vigorous vine.

[Mr. Thomson has done good service in the above communication, and we propose that all interested should merely wait till the Delaware ripens again. Traminer or not, they will all want it; but it has now too many spectators looking on to allow the subject to remain in doubt, for which, indeed, we have already stated there is, in the opinion of those well informed, *no question*.—ED. H.]

ENGLISH STRAWBERRIES.

BY JOHN SAUL, WASHINGTON, D. C.

AT page 72 of current volume are some very interesting notes upon the fruits of 1857, by Mr. W. C. Strong. He says: "That any English variety is desirable for our climate, is a question yet to be proved." However applicable this opinion may be to Massachusetts, it will not hold good in the District of Columbia.

Mr. John Slater, of Alexandria, Va., an intelligent and experienced market gardener, cultivates, and has cultivated for years, *none* but English strawberries, to which he has, this season, added one French variety. To use his own words: "I have kicked every other sort out of my garden;" and bear in mind, this was not without first testing them. "They were found wanting," and then discarded. He tests every native or foreign sort of promise; now what is the result? Any person interested in the matter can have ocular demonstrations in our market during the season of this fruit. His crops are not only abundant, but the fruit is of the largest size and highest flavor, in which these varieties are known to excel. When

other growers, with their little, scarlet sorts, get from six to twelve cents per quart for strawberries, Mr. S. can easily command from twenty-five to fifty cents, and, on their first appearance, a dollar. The varieties are Alice Maud, for a first crop, followed by Victoria and Kitley's Goliath; to these he has now added "Vicomtesse Hericart de Thury!"

Mr. W. Cammack, another horticulturist of long standing, cultivates principally English varieties. I say "principally," for he grows one (and I believe only one) native variety—Hovey's Seedling; the other sorts the same as Mr. S.; and he is equally renowned for his magnificent crops.

Mr. John Howlett, an excellent florist and gardener, cultivates English strawberries exclusively. To him is due the introduction and first successful culture of Kitley's Goliath in this neighborhood. From a small bed, a few feet square, he sold \$84 worth of strawberries—none for less than fifty cents per quart. Another great advantage of these strawberries is, that from their large size, they can be picked so quickly, and a few will fill the measure. All strawberries do not sell so high in our markets; any quantity of small, acid, scarlet strawberries are disposed of at prices ranging from six to twelve cents per quart.

As a proof of the estimation in which these varieties are held, another market gardener has about two acres of Kitley's Goliath, with others in like proportion.

The question will be naturally asked: How come those varieties to succeed to such perfection with the gardeners here named, whilst they have so signally failed in the hands of others in the vicinity? I answer, good culture. These men know the value of deep trenching, high manuring, and good after care, such as keeping them perfectly clear from grass and weeds through the summer, and the ground loose and broken. Persons not disposed to give such culture, but to depend upon the plough, and, in case of failure of a strawberry crop, to take off a crop of hay or clover, had better, by all means, stick to their scarlets; they are far more satisfactory. By "scarlets" I mean nearly all our native varieties, as few—very few—possess the least trace of a Pine, not excepting the best of American strawberries, Hovey's Seedling. This must be apparent to any person conversant with the original types of our now cultivated strawberries.

I am fully aware that many English varieties are not suited to our climate; others are disposed to burn. The nearer to perfection that a fruit reaches, the greater care and higher culture it requires; it is so with all garden vegetables, with florists' flowers and plants. Neglect the dahlia, rose, hollyhock, or pansy; how soon do the flowers of the three first become single and poor, and the last diminutive in size. Our finest cattle demand the greatest care. Apples are attacked by borers; pears are subject to blight; peaches gum; plums, apricots, and nectarines, are injured by curculios; grapes mildew; corn "fires;" wheat has smut; and our potatoes rot; yet persons are found to cultivate one and all of them.

VARIETIES.

CARRYING BEES TO THE MOORS.—An apiarian, in Scotland, has given in the *Cottage Gardener* a narrative of his journey, in carrying four hives of bees to the moors. The first place they made application for liberty to leave them with a cottager, was denied, on the plea that they robbed the heather of its juice! making the cows' milk not worth a button for making butter. This is the wisdom (he says) of the nineteenth century, found up near the clouds behind Greenock. When, at length, they found a welcome, the bees began to work instantan, and in four minutes the first bee was seen to enter, bearing pollen; then

another and another, faster and faster, until (the fifteenth minute after being opened) every entrance of every hive is crowded with burdened bees. Between August 12 (when I left them) and October 5, when I brought them home, I visited them twice, and deprived three of them on my second visit. The result of their sojourn in the moors, comprising, of course, these deprivations, is given below. The hives consisted of two collateral and two storied, reduced prior to removal by depriving them of supers, side boxes, and side bars, to as nearly the same weight as possible, with the double object of testing the two systems where food was plentiful, and of avoiding the paradox of carrying honey to the heather.

The Collateral Hives.—The tare of boxes, boards, &c., being deducted, the net weights are as follow:—

	August 12.	October 5.		
No. 1. Collateral . . .	20 lbs.	48 lbs.	Gain . . .	28 lbs.
No. 2. " . . .	23 "	53 "	" . . .	30 "
No. 3. Storied . . .	21 "	49 "	" . . .	28 "
No. 4. " . . .	24 "	50 "	" . . .	26 "

LARGE MORELLO CHERRY.—At Whalley Abbey, Lancashire, died, during the last autumn, the celebrated Morello Cherry, which was considered one of the finest trees of the kind in the North of England. Symptoms of decay had been noticed in it for several years, to the regret of all who knew it; and the proprietor, under the advice of Mr. Pontey, had spared no expense to prolong its life, but to no effect. This stately tree sank rapidly at last, and the Abbey has lost one of its well known and noblest ornaments. It has been conjectured to be nearly as old as the dissolution of the Abbey, and many and sad, since that time, have been the changes and vicissitudes which it has witnessed. When in full growth and health, in the month of May, it was singularly beautiful. Rising to ninety feet high, with a proportionate and graceful diameter, the whole covered with pure white blossoms, like a spotless pyramid of snow, it contrasted most favorably with the ivy-covered ruins, the dark foliage of the Scots firs and elms, and other adjoining trees. From its branches the mistletoe hung down, a plant almost unknown in other parts of East Lancashire, and its huge limbs cast a shadow over the high altar of the conventual church, the last resting-place of all that is mortal of the abbots who designed and executed the surrounding beautiful buildings. It contained two hundred and fifty-three solid feet of wood, one hundred of which have been sent to Messrs. Bell & Copeland, to be wrought up into appropriate furniture, to be kept as memorials of this splendid tree.—*CLIVIGER, in Gardener's Chronicle.*

DR CANDOLLE'S *Prodromus*, Vol. 14, Part II., has been published, comprehending Thymelæacæ by Meisner, Santalacæ by Alph. De Candolle, and some small allied orders. And thus we are brought almost to the borders of the great unisexual region of endogenous plants, for there is little now to intervene between the difficult race of Laurels and the great mass of Euphorbiacæ. In order not to delay the progress of the main work, Prof. De Candolle proposes to proceed immediately with Begonias, leaving room for the others in the series, as was formerly done with Solanacæ. Two volumes more are expected to complete Exogens. Prof. Andersson undertakes the Salicaceous order—a difficult task, requiring great judgment as well as experience. It is computed that the fourteen volumes actually completed contain 50,509 species, arranged in 4,525 genera. The first volume was begun in 1822, and appeared in 1824. If we suppose two botanists, on an average, to have been incessantly engaged on the work for thirty-six years, then 1,403 species will have been determined annually, or 701 by each—good work when species have to be carefully examined and compared, as has been the case with the *Prodromus*, and not put together with paste and scissors, à la Walpers. Who but a De Candolle could have had the power to carry

through so mighty a work as this, in which there will be, eventually, a complete systematic account of all plants known at the time of publication of the several volumes!

HOW TO ENJOY A GARDEN.—Dissatisfaction with ourselves and doings is the first step to improvement. Grumbling dissatisfaction that we have not the variety, grandeur, and extent of some one else who possesses and employs twenty or fifty times the resources, is one of those low, degrading forms of envy with which I can have no sympathy save that of pity, and, more especially, because it so blinds the judgment as to prevent the right use of the resources within its reach. The farmer's wife who manages a couple of flower beds in such a manner that the wealthiest could hardly make them more beautiful, is not only worthy of *all* honor, but gives the best evidence that, with increased resources, she would manage twenty *nearly* equally well. I have put in the word *nearly* advisedly, because the smaller the garden, other things being equal, the brighter and more telling should it be; and it is easier to make it so than when various gardens have to be attended to. Look on a couple of beds a tangled mass of flowers and weeds, and where and what would be the condition of twenty beds? Superior quality and beauty, be the sphere of their action small or large, will ever command approbation; and without these, mere extent will only be an extensive annoyance.—*Correspondent.*

Report of the Third Annual Fair of the Hancock Agricultural Society, and List of Premiums awarded. This is printed at "Carthage," and the two words of "Hancock" and "Carthage" are not followed by the name of any *State*, a defect which often surprises us. It is not uncommon, indeed, for newspapers to be issued for years and years without the name of the State in which they are published being anywhere inserted. Does not this look too much like a mere local circulation, and as if the locality was too much *all the world* the makers know? This report, we presume, emanates from New York or Illinois, but are not quite sure.



EDITORS TABLE.

WEATHER.—The snow which fell in early March disappeared on the 15th, when the blue-birds began to sing, and we are, as we go to press, sanguine of approaching gardening weather.

THE NOTES OF THE MONTH, in our present number, will be found to be quite spicy and interesting. Mr. Saunders holds a ready and able pen, which we have some difficulty in getting him to wield often enough; Cincinnati has drawn him out in defence in a manner that makes his "Note Preliminary" one for reference. The readers of that curious, facetious, and valuable book by Chandos Wren Hoskyns, republished by Lewis F. Allen in Buffalo, 1854, the "Chronicles of a Clay Farm," will recognize the agreement between the book as well as between the writings of the most scientific agricultural writers and the "Notes of the Month" for April.

WINTER RURALITIES OF BOSTON.—A reliable Boston correspondent gives us a curious and amusing account of the newest winter fashions of the people in that city. It appears they were all crazy on the subject of skating. All the young men and maidens from twelve to twenty-five years old did nothing in March but skate on Jamaica Pond. They say on fine days 5000 might be seen, including the heavy fathers and mothers, who went on the ice to chaperon their daughters. The latter were then hustled by the young men, and skated and slid against until they were all mixed up, when the daughters disappeared in the melee. The Balmoral petticoat was another great feature of the scene. The whole lake was surrounded by the carriages of the wealthy Bostonians, from twelve to four o'clock, or high change, and the sight, it is said, was beautiful. There was a great number of excellent skaters among the young ladies, who can cut their names backwards; the best skater was the greatest belle, and as for the young men, he who could not cut a ring backwards on the outside skate was nobody. Instead of balls and parties, the whole visiting and gayety the past season was on the ice. The young men and girls made up parties of fifteen and twenty, and went up Charles River ten miles to some village, where the heavy fathers who had driven out met them, and had a jolly dinner, when young Boston skated back by moonlight, and old Boston dozed back in the coaches. Healthful, all this, for mind and body; but we protest against the treatment of the old folks, and wonder the young ladies should disappear under the circumstances.

FIRE.—We sincerely regret to learn by a private letter from one of Dr. Grant's neighbors that a new propagating house, ninety feet in length, with 12 to 15,000 grape-vines (Delaware and Rebecca, &c. &c.), has been destroyed by fire. This is an accident to which such houses are always more or less liable, and should be carefully guarded against.

THE GARRIGUES GRAPE.—Mr. J. Hoopes, of West Chester, Pa., writes us regarding the Garrigues grape, that he observes in the *Valley Farmer* that it is described as superior to the Isabella, on his authority. He has no hesitation, he says, in declaring that "the Gar-

rigues is nearly equal in flavor to the Isabella and Catawba, and of the same size; but its greatest superiority over them consists in its extreme hardness and perfect exemption from mildew." He considers it worthy of general cultivation, particularly in the more northern sections of our country. The berries have a tendency to drop after becoming ripe. He thinks Downing's new work correct on this grape, although the originator always asserted it sprung from the seed of a raisin.

AQUARIUMS.—We have answered a correspondent elsewhere regarding aquariums, with references to former articles on the subject. A few hints for beginners are, nevertheless, in season. No odorous material or poisonous putty should be employed in joining the glass, and all varnish must be entirely dried before use. The shaded back of the aquarium should be placed next the light, as the rays ought to penetrate the water entirely through its upper or horizontal surface. Direct rays of light must be received during some part of the day, being screened by a white blind when the sun may be too powerful; as, should the water become tepid, it would be fatal to many of the inhabitants. Don't overcrowd your tank, but be content with a few specimens, and an occasional change.

The composition of artificial salt water has been found sufficient for zoophytes, but not for fish and other of the higher class of marine animals, except for a certain given time; its ingredients are—

Common salt	3½ oz.;	
Epsom salts	¼ oz.;	
Chloride of magnesium	200 grs.;	} Troy weight.
Chloride of potassium	40 grs.;	

To these add four quarts of water, and when the salts are thoroughly dissolved, say on the following day, the liquid must be filtered through a sponge; it is then fit for use.

The common ditch plant, *Valisneria spiralis*, is excellent for imparting oxygen. A glass "fish globe" does perfectly for beginners, and experiments will soon make you expert in selecting water-snails, gold-fish, &c. &c., but, as before observed, be sure you don't boil your water before using it, nor cook your pets by exposing them too much to the sun.

THE GRAPE.—We publish, in a former page, an interesting article from Mr. W. N. White, on hybridizing the grape. Mr. W. informs us that in consequence of the receipt of a dozen new varieties from Dr. Grant, the report of the Georgia pomological committee on the species of *V. labrusca* will be deferred for a time. Also, that they now have reason to consider the Delaware grape not a variety of *V. æstivalis*, as they supposed. In the committee's former report last year, speaking of the blossoms of *V. rotundifolia*, a misprint makes "more were found female or pistillate only" read "none were found."

PLANTING POTATOES.—They say abroad that the secret of getting potatoes ripe in August that will keep all winter, is "to set them well sprouted. There is no occasion to put them in early. The month of August is the critical time for the winter potato. But by sprouting the tuber before setting, you obtain nearly a month's advantage, so that when the disease does come, the plant is in a stronger state than it would otherwise be, and is thereby enabled to repel the attack." The author who thus writes in the Royal Agricultural Society's Journal is the Rev. E. F. Manly, and there may be something in his remarks.

GRAFTING THE GRAPE VINE.—We have met with many experienced persons who have never seen the grape-vine grafted. The process is so easy, that thousands who are anxious to possess the newer varieties, should especially take care of their old roots and insert scions of the new. No clay, or covering of the grafted part is necessary beyond the natural

soil, below which the graft is to be inserted. Saw off your stock and put in your scion with two or three buds, wedge-fashion, as in the cleft-grafting of fruit-trees, and then cover up a few inches, leaving one or two buds above ground; where the stock is very large, and inconvenient to split, a gimlet-hole, so made as to bring the two barks together, has answered. The sprouts of the old stock, as they spring up to rob the graft, must be pulled off. Grafts often bear some fine clusters the first season of growth, and many more the second.

In this way, the old stocks of wild grapes removed from the woods are very useful, with due care. We have lately seen an old Catawba vine that was wanted for shade forty feet off, laid down for a year till it had rooted well, and then was grafted with perfect success, and fruited the first season.

NECROLOGY.—We regret to announce the death of Samuel T. Jones, of Staten Island, New York, a most successful horticulturist, and formerly an eminent merchant of New York. These pages have recorded his enthusiasm and remarkable success in fruit culture. We have never seen a greater amount of good fruit grown in the same space; hot-house grapes, peaches, and pears, were Mr. Jones's especial favorites, and nobody had finer. We have measured peach-trees in his grounds much larger in circumference than the body of an ordinary man, and bearing most profusely. His method of treating these trees is recorded by himself in the *Horticulturist* for 1856, p. 501, and may be referred to with great advantage.

Mr. Jones was a native of Philadelphia, resided some years in England, and returning to New York, was the active mind in developing the mineral resources of the neighborhood; in the introduction of zinc paint he was conspicuously the leader.

In private life, as a member of the community, and as a consistent Christian, Mr. Jones will long be remembered. As a husband, father, and friend, he is most sincerely lamented by those privileged with his acquaintance.

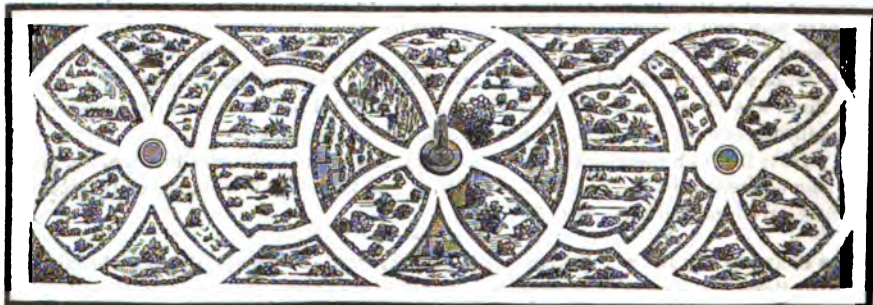
THE DEATH OF THE DUKE OF DEVONSHIRE is deeply regretted by horticulturists abroad. He is called "one of the most illustrious examples of refined taste and magnificent conception which the horticultural world has ever seen." "The fame of the gardens of Chatsworth," says the *Gardener's Chronicle*, "has spread through the world, and gave an impetus to the formation of the people's parks. To the very last the love of flowers was intensely manifested in this lamented nobleman; they may almost be said to have become a necessity of his existence. When a melancholy attack of illness brought on a debility which was incurable, his pleasure was to be wheeled to some object the beauty of which he still would gaze upon, and the conservatory at Chiswick is fitted up with little contrivances to enable him to stroll feebly among the shrubs which it contains. The Duke died at Hardwicke on Monday, the 18th ult., in the 68th year of his age, as peacefully as he had lived. By none will his loss be more felt than by the Horticultural Society, of which he has been President, since the death of Mr. Thomas Andrew Knight."

PEARS.—Mr. J. De Jonge states that it requires at least 15 years before the real merit of a new variety of pear can be completely determined. This term is not too long for most varieties. For those that are fertile, the period may perhaps be reduced to 10 years at the utmost, dating from the time of their first bearing, providing that no time is lost in the nursery.

A **WHITE APRICOT**, dotted with red, has been produced in Belgium, where one amateur planted last year 4000 stones with a view to procure new and good kinds. The apricot succeeds well in Belgium, as many may remember who have travelled there in the season.

A GARDEN AND FOUNTAIN.—There is no reason why a suburban garden should not be beautified by water scenery of some kind—by the formal stone basin and fountain, the circular pond shaded with rose arches, and stocked with ornamental fish, or the mimic lake or river, partially hidden to conceal the meagreness of its extent, and the illusion helped out by sloping banks, massive shrubs, and a few water-fowl.

Where the dimensions are small, a basin is to be preferred. Such a tank must not be inclosed by shrubs or a profusion of vegetation, but must offer its white rim in contrast with smooth turf, sloping gently up towards a hillock, out of which the basin rises with its circle unbroken, or only broken in one or two places, by an elegant trailing plant, or piece of appropriate statuary. In such cases, the surrounding borders should be formally laid out with gay exotics, the box borders kept in the neatest trim, the standard roses on the turf few but fine, and anything in the nature of a shrubbery or sylvan retreat placed sufficiently far away so as not to break the formality and brightness which should surround the basin. The fountain may be of a classical design, a mere jet on the surface of the water not having sufficient dignity, while the ornaments of the paths and grass-plot should be elegant vases crowded with gay plants; and light iron chairs, rather than rustic baskets and mossy seats.



In an extensive garden of formal arrangement, laid out in parterres, planted with various exotic shrubs, the centre should be appropriated to an ornamental basin and bold jet. From the centre the paths may diverge and form the radii of a circle, so as to afford approaches to the fountain and views of it from every part of the formally planted scene. The annexed plan for such a garden may be found useful where there is sufficient space to give it fulness of character. The shrubs may be botanically as well as artistically arranged, and a combination of the arboretum and pleasure garden satisfactorily accomplished.

In our next we shall give a sketch of "a garden aquarium."

PROFESSOR JOHNSON'S REPORT.—The "First Annual Report of Prof. S. W. Johnson, Chemist to the Connecticut State Agricultural Society, and Professor of Analytical and Agricultural Chemistry in Yale College," has been kindly forwarded us by Mr. Henry A. Dyer, corresponding secretary. Here is something valuable, some real information for the farmer, which we trust will be spread abroad in an intelligible form by the farming journals. It is worth all the ipse-dixits of ignorant conjectures that form the staple of so many printed works; it is founded upon analysis, and its facts may be relied on. We consider it beyond price; it goes to the root of the matter, and without fear or favor tells us what manufactured manures are of value, what is their commercial value, and which are worthless; the Professor says the Lodi Company's manufacture cannot be recommended. It assures us that cotton-seed is almost as valuable food as linseed cake, and that it is much richer in oil and

albuminous matter; that cattle eat it when mixed with palatable food, and soon learn to eat it with a relish; that it is also a capital fertilizer. "Next to Peruvian guano, this is a substance (cotton-seed cake) which, if its composition proves uniform, is most nearly worth what it costs." This report will be hailed by intelligent agriculturists as of the highest value; it inaugurates a new era; read and study it, all farmers.

HEDGES AND EVERGREENS—*A complete Manual for the Cultivation, Pruning and Management of all Plants suitable for American Hedging; to which is added a Treatise on Evergreens.* By John A. Warder, M. D. New York: A. O. Moore, 1888.

This is a duodecimo of 291 pages, with illustrations, at the price of one dollar. It is a *résumé* of what is known on the subjects it treats of, and might, in fact, be called "A Plea for the Osage Orange;" the reader will find it contains the two following paragraphs—the first from the author, the second from Mr. Ernst, on the Osage Orange:—

Page 126—"The interlacings, as a remedy, would, by a good cultivator, be considered of doubtful propriety, to say the least, except in a very limited extent."

Page 192—"Plashing answers well; it is a simple process," &c. "Plaiting or plashing are the only safe modes of protection, and never should be dispensed with for an outside protection," &c.

It is true that Dr. Warder says: "For my own notions, as to the sentiments contained in the last paragraphs, the reader is referred to the appropriate chapter." The said chapter is intended to controvert the opinions of the *Horticulturist*, which are sustained by Mr. Ernst at page 192, in the fullest manner, one employing the word "interlacings," and the other "plaiting or plashing."

The last part, on evergreens, is intended for learners—the merest tyros in planting, and we submit to the author whether the use, to such, of words like "*adnate*" and "*phytology*" in common writing, is not giving too strong expressions for beginners, who may be obliged to turn to their dictionaries.

Again: we beg book-makers not to follow so frequently the example of the Patent Office in its "Reports." By general consent of naturalists and all scientific men, the Latin names attached to plants when they are significative of a place, a country, or a person, are spelled with a capital letter; *Cedrus Libani* and not *libani*; *Abies Canadensis* and not *canadensis*; see pages 258 and 254; and again, page 250, *Pinus Australis* is spelled with a small *a*, and the same error is repeated in *sinensis*, *canariensis*, &c. &c.; it has *Californiana* for *Californica*, &c., to say nothing of names being spelled different ways.

We regret that the writer has omitted the enumeration of one of the best, if not the best plant for an evergreen ornamental hedge, viz., the Siberian Arbor Vitæ, *Thuja Sibirica*. We most willingly admit that mistakes are easily committed, and that our own printer allows errors sometimes to pass, but nevertheless make these suggestions for the benefit of future editions; the subject is an important one. Dr. Warder can do better.

With regard to the Osage Orange as a hedge plant, we indorse Professor J. B. Turner's opinion, that "the causes of failure have been, in most cases, imperfect preparation of the soil, poor plants, *careless culture*, or the intrusting of the job to professional hedge-makers, who were strangers to their employers."

AMERICAN POMOLOGICAL SOCIETY.—President Wilder requests us to announce that the seventh session of the American Pomological Society will be held in the city of New York on the 14th of September next. Circulars will be issued in due season.

HOOPER'S FRUIT BOOK has had a great sale at Cincinnati, and a new edition, with corrections, is in press. Dr. Warder is preparing his work for publication.

DEAR SIR: Allow me to call your attention to a plant we have here, called the "Boston ivy," which I presume is identical with the "Australian" or "French ivy," of your correspondent "W." It is the *Bryonia palmata*, a native of Ceylon. Nat. Order Cucurbitaceae. It is one of the very best plants we have for hanging-baskets, or vases, in the conservatory during winter.

WM. JOHNSTON.

[Can we be writing of the same plant? Pray send us a leaf or a flower, one or both.—Ed.]

DENDROBIUM NOBILE.—A splendid plant of this lovely Dendrobe is at present flowering in the collection of B. K. Bliss, Esq., of this place. It is but a small specimen, comparatively, yet has 70 large flowers on, all well expanded. A more lovely object can scarcely be conceived, and such is its beauty that, when better known, we are sure no collection of hot-house plants, however small, will be considered complete without it. Most truly yours,

Springfield, Mass., Feb. 10, 1858.

DANIEL BARKER.

CUPHEA EMINENS.—Ed. *Horticulturist*: In a recent number I notice a correspondent recommending the *Cuphea eminens*, as one of the most valuable winter blooming house plants ever introduced. In reading the report of the committee on flowers of the Massachusetts Horticultural Society, I observe they speak of it as utterly worthless. I am much interested in winter blooming plants, having to supply bouquets largely for our families, and was about to increase it largely; but now I hesitate. It is quite possible the plant exhibited in Boston was poorly grown, or illy flowered, as I have myself seen very valuable plants brought out in a very dubious condition in order that its owner might have the doubtful credit of being its first exhibitor. I should very much like to have the opinions of others who have grown it, if you think desirable. The committee's opinion of *Canna Warscewickii* I fully indorse, and inclose you a few flowers from a spike I have now open.

"A BOUQUET-MAKER."

[The flower is a glorious deep crimson, and a valuable plant both for leaf and bloom.—Ed.]

PLANT CABINETS.—Ed. *Horticulturist*—Dear Sir: I have no doubt many of your readers were, as I was, much pleased with your remarks on these structures. By some such contrivance, many who are now deprived of the luxury of a few flowers, may have them in perfection. I think I would sooner consent to be deprived of any source of pleasure than that which my little conservatory affords, and am gratified whenever I see anything tending to afford the masses an opportunity of similar enjoyment. I write now to remark that a neighbor who has not a bay window outside, has contrived to make one *inside* the common plain one, by a double sash; and the way her plants luxuriate in this small "house" is the admiration of every passer-by. Should you take time to honor my little place with a call one of these days, I will take you to see it. The dry air of rooms seems to have an injurious tendency on plants; and it is really surprising to see how well they do in these cases; besides removing the annoyance which watering plants in rooms in the usual way oftentimes entails.

Philadelphia.

M.

DIOSCOREA BATATAS.—Mr. Editor: In renewing my somewhat procrastinated subscription to your spirited and interesting periodical, it may not be out of place to write a little of *our experience* with the above, what we consider a valuable esculent. We have cultivated this potato for two seasons, and the only noticeable objection so far is that the tubers penetrate the earth so deep that it is hard to get them out whole.

I can enumerate in its favor its productiveness, good eating qualities, exemption, so far, from disease; but, above all, its extreme hardness to withstand our most rigorous winters

in the open ground without the slightest protection. A few hills left out the first winter ('56 and '57) have grown luxuriantly the past season, whilst of those now in the ground (over $\frac{1}{2}$ acre) we dug two hills a few days ago, and had them served up in a pudding to quite a household, and is remembered among the good things that gratify the appetite.

I am aware that I run some risk in testifying thus to the merits of the *Dioscorea*, as much has been said against it through the public prints, resulting in some cases from bad culture and soil, and planting *too small and imperfect tubers*; yet I firmly believe when some reasonable time elapses to get acquainted with its characteristics, it will rank as one of the institutions of our glorious country.

SAMUEL COFFMAN.

Carroll, Fairfield Co., Ohio.

THE VERBENA.—We have an interesting communication on the verbena, from James S. Negley, for which we cannot find space this month. Mr. Negley has established a valuable nursery in Pittsburg, Pa., where he prides himself justly on having all that is new and valuable; he names to us a number of the finest roses for sale, which are but rarely to be yet found in our eastern collections. Pittsburg is an admirable point for distribution to the West and South, and we should have no doubt that our friends in Natches, for instance, would find it to their advantage to procure novelties from thence.

Barnes & Washburn, Harrison Square, Dorchester, Mass., put up their collections of flower-seeds in a most attractive way. Boxes with elegant covers, *printed in gold*, contain respectively 22 varieties of the best kinds for one dollar, and 44 kinds for one dollar and seventy-five cents; 10 varieties for fifty cents, and extra varieties as enumerated in their advertisement, which it will be well to consult.

John Perkins, of Moorestown, New Jersey, a few miles from Philadelphia, has a fine collection of large, well-grown evergreens, larger than are usually found in nurseries, which some who desire immediate effect may thank us for noticing.

CINCINNATI HORTICULTURAL SOCIETY.—Will our friends of this society permit us to suggest more care in the printing of their official reports in the *Cincinnatus*. The old black letter book on gardening, reprinted at this office, is not the "*New Orleans Orchard*;" that city was unknown as a book-publishing town in 1626. And the flowering of the *Jasminum nudiflorum* in January is not an evidence of precocity; it is a winter flower, and therefore will bloom at that season unless cut off by unusual rigor.

WINTER APPLES.—We have from Mr. R. Peters some very fine winter apples, worthy of note, viz: Nickajack (already figured in this work), Green Crank, Limber Twig, and Sharkley. The latter, Mr. P. thinks the best of all apples for the "cotton growing countries," as a late keeper. Nickajack ranks next as a keeper. Green Crank is preferred by many to the Nickajack, but does not keep so long. To our taste it is the best apple of the whole. Limber Twig is well known at the north, and is valued by the "old times" men, who hauled hundreds of miles to market, and then *shovelled* the apples into and out of the wagons; after all this they would keep until April and May.

PROFITS OF PEAR CULTURE.—We have ready for our next number an article on this subject, from the pen of Lewis F. Allen, Esq., of Buffalo, New York; and from Mr. Chorlton one on the grape, in-doors and out.

TWO NEW VEGETABLES are attracting much attention in England, the Cottager's Kale, described as a very fine Brussels sprout, the sprouts of which will not heart; and the Custard Squash, a very superior sort.

STRAWBERRIES.—If you are troubled by birds, wide distances are dangerous, unless you protect. Kill slugs in winter with lime or ducks. Do not water while the plant is in flower, but from the time the berry is formed till it reddens you cannot pour on too much. Put clean wheat straw between the ranks, and water every third day, in sultry weather, copiously. Begin manuring directly after the crop is off and the runners taken. Preservation of life is better than the chance of a resurrection. Potash is a good manure. Use guano (sparingly), soot, coal ashes, wood ashes, liquid manure, cow and horse droppings. Stale night-soil is believed by many to be the best. New maiden earth is also good for a dressing.

After the crop is off cut off all the leaves and dress handsomely, stirring the soil about two inches deep between the ranks, and one inch near the plants. This brings a luxuriant crop of leaves, which protect the crown in winter, and throw off the wet. This will not do, unless you do it *early*, and are a "high manurer."

Now, if you will attend to these rules, you will get good and fine Strawberries. Remember, says a good gardener, the words—Manure, Pump, or Irrigate.—W.

ARTIFICIAL FRUIT.—We saw the other day at H. A. Dreer's, 327 Chestnut Street, Philadelphia, the handsomest plate of artificial fruit that has ever come under our notice. The Peaches were beyond measure tempting, even to the incipient decay. On inquiry, it appeared they were made by a lady who also devotes her attention to teaching the art—Miss C. Smith, No. 1013 Coates Street, Philadelphia.

CERASUS JAPONICA ALBA FLORE PLENO.—For a fine specimen of this most beautiful double flower, we are indebted to David Ferguson, near Laurel Hill Cemetery. It eclipses the old double flowering cherry and the spireas; is perfectly hardy, and of easy cultivation, and a most lovely flower to force.

ANSWERS TO CORRESPONDENTS.—Geo. M. Brown—The "Turk's cap" cactus—*Mela cactus communis*—is, we believe, sometimes called "Pope's Head," though it is unusual for it to branch out in the way you describe yours to do. We could not name it from your description. Cactuses, to bloom well, require a season of growth, and one of rest. It is a good plan to set them out in the open air about May; give them a liberal supply of water for one or two months, then gradually dry them off for winter, and they will well reward you. A *Cereus multangularis*, and *C. Peruvianus*, annually bloom, thus treated, in our garden.

James Moore: In propagating from unripe shoots, either of the vine or of any plant, bottom heat is of great advantage, and in many cases essential to success. If the cuttings can be so placed, as not to have too great a heat at first, say about 55°, and after a week or ten days increased to 60°, and so on to 65° or 70°, they are more certain to strike than when kept in a uniform heat. Any sharp fine sand, washed so as to have any impurities it may contain separated, is as good as silver sand for striking in.—Ed.]

John J. Goldsmith, Waverly, Ill.—The pea sent is well known; it is called the Oregon, and has not given satisfaction where we have known it to be planted.

Vignerons.—The term *muscat*, applied to particular kinds of grape, is not derived from the perfumed or musky flavor of those varieties, but from the berries attracting flies, *musca*, for which reason the Latins called the kind *vitis apiaria*.

W. H. B., York, Pa.—We know of no such article as *Black sulphur*. Probably you are right in your supposition.

Amy, Baltimore.—Remove the trees very carefully in the spring, about the time of its first growth. Do not allow the roots to get dry.

A summer-house, such as you propose, may be erected by employing cedar poles, &c., according to plans dispersed through the volumes of the *Horticulturist*, which you are good enough to say you have been "a lover of since its first publication."

George H. Brown, Kingston, N. Y.—We have exhausted the subject of Aquariums long since, and cannot in this case "try back." See vol. for 1855, p. 302; vol. for 1856, p. 405; vol. for 1857, pp. 47 and 281. For the book published by Dix, Edwards & Co., apply to your bookseller; it is very full. We are constantly referred to for information already imparted, and as we publish indexes, it might often save trouble to consult them.

Myron R. Benton.—We shall be greatly obliged by a sight of the remarkable apple you mention, at its next ripening.

NAMES OF PLANTS.—(H. H.) The Fern is the *Asplenium flabelliforme*, a very pretty greenhouse Fern, and useful for baskets. The other pretty little plant has often been mentioned under the name of the Artillery Plant, and called *Pilea muscosa*, or *Thelygonum cynocrambe*, a very interesting little plant for the stove. The Cactaceous Plant is one of the *Opuntia* family, probably *Opuntia ficus Indica*; but we cannot be certain of this from a bit so small.

(E. S.) *Ipomoea quamoclit*. (D. McEwen.) *Phytolacca decandria*, or Virginian Poke. (J. L.) *Cerinthe major*, a garden annual.

CATALOGUES, ETC., RECEIVED.—H. A. Dreer's Catalogue for 1858, includes premium roses, dahlias, verbenas, and a select list of fruit, and ornamental trees and plants, for sale at 327 Chestnut Street, Philadelphia, or at his garden near the stand-pipe of the West Philadelphia Water Works, and enumerates various things, as well as seeds, in request at this season.

Experiments and Observations upon the *Sorghum Saccharatum*, or Chinese Sugar Cane. By Joseph S. Levering. For sale by Henry A. Dreer, 327 Chestnut Street, Philadelphia.

Lyons, Wayne County, N. Y., Nurseries. E. Ware Sylvester advertises in this way all the fruits, evergreens, &c. &c.

A Supplementary Priced List of Plants for sale in the spring of 1858, by W. C. Strong, Brighton, Mass., five miles from Boston, comprises New Hardy and Foreign Grapes, New Roses, Fruit Trees, New Bedding and Greenhouse Plants, &c. &c., and offers inducements, rarely exceeded, to purchasers.

Sheppard's Forwarding and Commission Horticultural Nursery and Seed Agency, 159 Front Street, New York. Circular.

Protest against the Report and Awards on the Field Reapers and Mowers and Harvest Implements, by the U. S. Agricultural Society, at Syracuse. By R. L. Allen.

Descriptive Catalogue of the Rochester Commercial Nurseries. H. E. Hooker & Co. An excellently considered list of valuable fruits, &c.

A. O. Moore's Agricultural Book List; 140 Fulton Street, New York; advertises especially Olcott's Fifth Edition on the Sorgo and Imphee.

Mr. H. A. Mish, Harrisburg, Pa., has issued a Catalogue of Fruit Trees at reasonable prices, Grapes of the newest and best kinds, Strawberries in great variety and quantity, and Shade and Ornamental Trees. We expect to learn that this enterprising nurseryman's grounds will very soon rank with any in our own or sister States.

The Agricultural College of the State of Michigan, is a pamphlet setting forth the advantages of the institution, and giving a list of the numerous students who are availing themselves of this most useful measure. We recognise very able teachers, and among them our friend John C. Holmes, as Professor of Horticulture, and Treasurer.

Monthly Bulletin of the United States Agricultural Society, Washington. A valuable publication.

Landreth's Rural Register and Almanac for 1858. This Register takes precedence in one important respect; it is to be had for nothing—or at all events a thankee. But it has other and great merits, being compiled by one of the best cultivators, and the largest seed-grower in the world. Address, with a stamp, D. Landreth, Philadelphia. The information it contains is reliable, and there is no more correct almanac.

James M. Thorburn's Annual Descriptive Catalogue of Flower Seeds, with practical directions for their culture and treatment. There is no better, and as their seeds are punctually sent by mail, or as directed, they deserve and will, we hope, receive extensive patronage.

The Sweet Potato; its Northern Culture. Directions in a printed sheet, from O. S. Murray & Son, Twenty Miles Stand, Warren County, Ohio. Excellent instruction, which we may take occasion to print.

Catalogue of Select Annual, Biennial and Perennial Flower Seeds, cultivated and sold by David Landreth & Son, 21 South Sixth Street, Philadelphia. Reliable and dependable, as are their garden vegetable seeds, now as well known as the name of the President of the United States, and household treasures wherever known.

R. Buist's Select Catalogue of Greenhouse, Hothouse, and Hardy Plants, 322 Market Street, and Darby Road, Philadelphia.

R. Buist's Catalogue of Select Roses, Rosedale Nurseries, Darby Road, Philadelphia. These two Catalogues are well worthy of attention. We are free to say that few if any establishments in this country contain the variety of desirable plants that Mr. Buist cultivates. His preface on the Rose is very satisfactory. Mr. B. spells the rose we noticed favorably last month *Vicompte des Cazes*, and not *Vicomtesse*.

Barnes & Washburn's Descriptive Catalogue of Choice Flower Seeds, Dorchester, Mass. Another of Dahlias, Verbenas, Petunias, &c. &c. These gentlemen are carrying on a flourishing business, and deserve credit for enterprise and careful regard to the interests of their customers.

Catalogue of Fruit and Shade Trees, Shrubs, Roses, Vines, Bedding Plants, &c., for sale by John W. Adams, Portland, Maine. A valuable catalogue of a good collection.

Address before the Georgia Horticultural Society, on its 19th Anniversary, Feb. 12, 1858. By John E. Ward. Savannah, 1858. Eloquent and terse.

The Commercial Crisis; its Cause and Cure. Two Lectures delivered in Montreal. By William Brown, Cote-des-Neiges Nurseries, near Montreal. Here is one of the craft lecturing on a new topic, and we mean to read what he says.

Descriptive Catalogue of Garden, Field, and Flower seeds, sold by Wm. Thorburn, 492 Broadway, Albany, N. Y. Comprises everything required.

Messrs. Bridgeman, New York, have sent us their valuable Spring Catalogues, but just too late for examination.

G O S S I P.

— The amount of the influence of vegetation, as such, upon the air we breathe, has thus been demonstrated. For every six pounds of carbon which plants have accumulated in their structure, they have withdrawn from the atmosphere twenty-two pounds of baleful carbonic acid gas, and replaced it with sixteen pounds—an equal bulk—of life-sustaining oxygen. Consider the quantity extant merely in the trunks of trees. The trunk of a single giant pine contained 356,000 pounds of carbon—a quantity sufficient to propel, on our railroads, 200 tons of merchandise, a distance of 3,560 miles! In its growth, this tree withdrew from the air 1,305,333 pounds of carbonic acid gas, and replaced it with 949,333 pounds of oxygen gas—a quantity sufficient to maintain the respiration of a single man for 1,100 years.

Add to the quantity of carbon gathered by this one huge California tree all that is contained in the forests and herbage of the world; all that accumulated in the soil as vegetable mould, peat, and in other forms, the product of the vegetation of by-gone ages. And finally, let the estimate embrace all that belongs to the bodies of the whole existing animal kingdom, and we shall have the expression, if it can be made in figures, of the amount of a single (though the largest) element which vegetation has withdrawn from the atmosphere. If we multiply the vast amount of carbon by sixteen, and divide it by six, we obtain the number of pounds of oxygen gas that have, in this process, been supplied to the atmosphere, and this is the only operation in nature which gives to the air free oxygen gas—that indispensable agent of animal life. Animals consume it, and give back carbonic acid, which, while it is injurious to their life, is the principal element of the food of vegetables, is consumed by them, and the oxygen restored for the use of the animals. Hence the necessity of the vegetable kingdom in purifying the air we breathe, and hence, too, the impure air of cities, where animal overbalances vegetable life.

— The Cactus tribe—growing under the burning rays of a vertical sun, on dry sand nearly devoid of vegetable mould, and beneath a sky that for three-quarters of a year yields them not one drop of rain—are tumid, with a watery juice, of inestimable value to the parched traveller. Even the wild ass, cautiously stripping off the dangerous spines with his hoof, knows how to help himself to a delicious draught, when traversing the desolate steppes.

— The Tree, or Cow Cabbage, is one of the most remarkable of the cabbage kind, having a hard and woody stalk, averaging five feet in height, and used for walking-sticks. In the Island of Jersey it reaches the height of eight or ten feet and more. This is mainly produced by daily pulling off the lower leaves as fodder for the cows, leaving foliage only at the top; thus a small garden has almost the appearance of a plantation of palms. Planted close, as living fences, they keep out fowls and small animals. Sheds are thatched with the dried stems; they serve as stakes for kidney beans, peas, &c., and as cross-spars for the purpose of upholding the thatch or roof of the smaller class of farm-buildings, cottages, &c., and, when kept dry, are said to last upwards of half a century. At a distance from the coast, and in colder latitudes than Jersey, this cabbage always degenerates. The walking-sticks are almost handsome.

— We have learned, says Dr. Gray, what the food of plants is, and whence they obtain it. Their universal food is rain-water, which has absorbed some carbonic acid, nitrogen, and ammonia or its compounds, from the air, or dissolved them from the decomposing remains of former vegetation already existing in the soil, whence it has also dissolved a variable quantity of earthy matter. This liquid is imbibed by the roots, and carried up through the tissues of the stem; the crude sap is carried into the leaves; these and other green parts of plants (the *chlorophylle*) constitute the apparatus of vegetable digestion. The agent (the motive power which puts this most curious chemical apparatus into action) is solar light. This is the indispensable agent by which lifeless mineral matter (earth and air) is transformed into the organized substance of living plants, and, consequently, of animals. Such is the important part which light performs in vegetable digestion—that initial step in organized existence upon which, as the first link in the chain, all the rest absolutely depends. Hence the Creative fiat, 'Let there be light,' was the immediate precursor, as it is the indispensable condition, of organized and animate existence. Again: It is clear that the oxygen which is given to the air, in ordinary vegetable digestion, comes from the decomposition of carbonic acid. Plants take this latter gas from the air, directly or indirectly; they retain its carbon; they restore to the air pure oxygen. This is the principal material which is given up to the air, and it alone renders it fit for the breathing and life of animals. To verify this, expose some freshly-gathered leaves to the sunshine in an in-

verted glass vessel, filled with water, so as to collect the bubbles of air which rise, and which are nearly pure oxygen gas. The evolution of this gas goes on while the sun shines, but immediately stops when a shadow is cast over the leaves, and is resumed when the screen is withdrawn, or when a gleam of reflected sunlight is cast upon the leaves from a mirror; thus, showing how entirely the whole depends on sunshine. In nature's operations (as in the Daguerrean operation), diffused daylight answers the purpose, but, in our rude experiments, we cannot quite imitate the delicacy of her processes.

—"In the parish churchyard of Aldworth, in Berkshire," says a correspondent of a London paper, "stands a yew-tree, which is much larger than any I have ever seen or read of elsewhere. This tree is nine yards, or twenty-seven feet, in circumference, four feet from the ground. The denuded branches spread over a very large surface; their shadow, it is affirmed, at one time covered nearly an acre of ground. Its once lofty head is decayed.

Notes for the Month.

APRIL.

VINEYARD CALENDAR.

BY R. BUCHANAN, CINCINNATI, OHIO.

THIS is a busy month for the vine-dresser, as, in this and the three succeeding months, the crop has to be made. Driving in stakes that may have been loosened by the frosts of winter, replacing by new ones those that have rotted off, tying the vines to the stakes, and, towards the latter part of the month, hoeing or ploughing the vineyard, if the ground is in order, are the principal duties that crowd upon the vine-dresser in April. Some of the stakes that have rotted off at the surface of the ground, may still be long enough to sharpen and drive in again. Stakes should be six and a half to seven feet long at first, so that they may bear to be sharpened, and driven in two or three times; they may thus be used for many years.

The process of tying the vines to the stakes is simple, and has been given in a former article, but I will here repeat it. The branch is bent round in the form of a bow, or three-fourths of a circle; the top part or centre of this bow is fastened to the stake by a willow tie; the top end of the branch (which now becomes the lower part of the bow) is either fastened close to the stake by the same kind of tie, or left a few inches from it. This is done in soft weather, in the forepart of the day, when the branch is pliable, and will not readily break.

Hoeing or ploughing should only be done when the ground is mellow, or in order for working.

This is also the month for *planting new vineyards*. Lay off the ground (previously prepared) by a line, and put down a stick about fifteen inches long where each vine is to stand, at distances of three feet by six, three and one-half by seven, or four by eight feet apart, as may be preferred. Then plant the cuttings or vines, when the ground is in order, by digging a hole about a foot deep (the width of the spade), and fifteen inches long. Plant two cuttings, in a slanting position, eight inches apart below, and one inch above ground, leaving the top bud even with the surface, and fill the hole up nearly full, to be afterwards filled up at the first hoeing. If both cuttings grow, take up one to replace failures, or cut it off under ground, as but one vine should be left to each stake. Vines may be planted a foot deep, and the holes filled up at once.

The wine has to be merely treated as directed in last month. Keep the casks full, and the bungs tight.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

A NOTE EXPLANATORY.—The natural anxiety which every right-minded man feels for his own accuracy in words written or spoken, and in justice to those of your readers who peruse the "Calendar of Operations" communicated by me to your pages, renders it an imperative duty, on my part, to notice the animadversions on these articles by "Cincinnatus" in the March number of the *Horticulturist*. He accuses me of negligence and carelessness in their

preparation, and that, in consequence, there are frequently errors in my advice. On this point I at once admit my sensitiveness, as I would consider it an insult both to yourself and readers, were I to advocate a mode of practice that a lengthened experience had not satisfied me to be correct, or advance statements that I had not proved and weighed by every available means in my power before making them.

In my opening number (January, 1856), I alluded to a difficulty that I had before experienced in writing calendars, viz: "That calendars, in general, are either too brief to be valuable, or too lengthy and minute for the limited space of a monthly periodical." I further signified my intention of attempting to steer a middle course, and it has therefore been my constant aim not only to avoid useless repetitions, but to make my remarks as comprehensive as possible, consistent with clearness. How far I may have been successful in doing so, I of course cannot be a competent judge. It may be that I have,

"In laboring to be brief, become obscure."

But I well know, that if my desire had been merely to fill a certain amount of pages, I could,

"With far more ease, have told a longer story."

Your correspondent seems anxious that his remarks should not be considered as being made in any carping spirit. I would have been less inclined to think so if he had not misquoted my remarks, and attempted to falsify my meaning by disconnecting sentences, with a view of obscuring any clearness or accuracy of expression which they contained. With regard to the advice which your correspondent deems objectionable, I do not, on again perusing it, wish to make any alterations. It is true, that, by extending the paragraph, it might be rendered so as to be more readily understood; but I submit that, taken in connection with the general tenor of my calendars, there is no room for doubt as to the meaning intended to be conveyed.

In the "Calendar" for October last, I remarked that "the relative advantages of fall and spring planting is open to much discussion. So much depends upon local circumstances, that diversity of opinion is of all things most likely. One man will plant in October, another in December, and, in both cases, it will be considered *fall planting*." I mentioned the circumstance as one reason for diversity of opinion on the practice, as I find many people consider planting in October, November, and December, equally, as fall planting. Is it necessary for me to add that I do not look upon December planting as coming under the appellation of fall planting? In the October "Calendar" for 1856, I remark that "in the fall the soil is warmer than the air; the formation of roots proceeds while the branches are dormant." Further on: "But to insure these good results, planting should be proceeded with *immediately after the leaves have fallen*; if delayed beyond October, success will be less certain."

To come more particularly to the objections of your correspondent; in the "Calendar" for last November I remark: "In sheltered situations, trees may yet be planted; do not, however, plant in a hurry, but let the ground be thoroughly prepared, and in good condition." My meaning is surely obvious enough, which is: that rather than plant in a hurry, or before the ground is thoroughly prepared, to defer it until spring. This meaning cannot for a moment be doubted by reading out the paragraph. "If you find it more convenient to get your trees now than in the spring, or if your orders have to come from a more northern locality than your own, by all means secure them at once; and when they arrive, have a deep trench prepared, and lay them in closely, covering well, at least half up their stems; *they will then be ready to plant at the earliest fitting moment in spring*." Is this not sufficiently explicit? or is it necessary for me to admit "that waiting for the frost to mellow the soil, is an ill method of effecting early fall planting?"

I have strongly and frequently urged, whenever occasion offered, the primary importance of draining, more especially in clayey soils, and their exposure to the ameliorating influence of the atmosphere, in order to bring them into a condition fitted for cultivation. In the paragraph from which your correspondent has taken his text, I remark: "It is a commendable practice to prepare the holes now, throwing out the soil, and leaving it exposed, to be acted upon by frost; by this means it will acquire a friability not otherwise easily obtained." This amelioration of soil by frost your correspondent considers "all moonshine," and goes on to observe that "summer fallowing and winter freezing," so far as they relate to a system, "belong to the barbaric age of agriculture;" that "fall ploughing of light soils is universally considered by our most scientifically practical agriculturists as positively injurious; that "wet or stiff soils, when ploughed in the fall, are heavier in summer," and this because "the frost decomposes the vegetable fibres, roots of weeds, and past crops;" that "the

more modern," and, as he thinks, "the more accurate conclusion is, that all such treatment of soils is mere cobbling, unworthy of our age." And "if gentlemen wish to render soils friable, they now do it by draining, and adding silicious and vegetable substances;" that "it is better not to plant a tree than plant it in a soil upon which frost will have a beneficial effect in rendering it friable." But if it is "first drained, then get a barrow of decayed leaves from the woods, and a barrow of well-washed sand from the public road, and mix them with the stiff soil, we may go ahead without hesitation." "Turning it up to freeze is a temporary affair, unworthy of being considered a commendable practice." Such is a fair epitome of your correspondent's "confession of faith." It exhibits such total ignorance both of the science and practice of agriculture, that if the writer alone were concerned, I would throw down my pen; for, although I have no particular aversion against entering into the arena of controversy with a well matched opponent, there is no honor in taking the easy advantage of one who, like the Chinese soldiers I have heard of, rushes forward with two or three swords at a time, and that, too, with the hilts of the weapons presented to my hands, and the points sticking in his own.

Bare summer fallowing has in part been superseded by the culture of green crops, but is still extensively practised by intelligent and successful farmers in the best farmed districts of country. On this subject, one of the most accomplished farmers and writers on agricultural matters has the following remarks: "Though it cannot be desirable to see the practice of bare fallows extended (for it exists too much already upon many soils where it might be with every advantage substituted by green crops), it must yet be borne in mind that it is not in the mechanical structure alone that heavy soils differ from light soils; their *chemical difference*—which is quite as great—lies in that essential particular that the clay soil is naturally richer in the mineral constituents required by your crops. Potash, soda, and phosphorus, which you must *supply* to a light soil before you sow it, you have only to develop in a clay soil by deep and frequent stirring, and submitting to the oxidation of the atmosphere. The green crop, with its carbon-obtaining leaves, will no doubt supply organic wealth to either; but inorganic food can come from the soil alone, and if the soil be able to supply it from its own resources, *one-half* the value of the green crop, as a fertilizer, is renounced. Its remaining value as a collector of organic matter from the atmosphere, is the point upon which the question will be poised, of its adoption on a soil which, after effectual drainage, subpulverization, and liming, still retains the character of a 'clay.' Even upon such land (which is not so plentiful as some imagine), experience has yet to prove how far, by deep ploughing and subsoiling immediately after harvest, and making the most of suitable weather between that time and the following summer, the green crop may take its place in a six-course system as profitably as in the four-course system upon lighter soils. The bare fallow is too ancient, too prospectively laborious, and *patient*, not to have deep reason at the bottom of it. Chemistry has discovered the truth which practice has attested. The question may be not whether the fallow shall be abandoned, but whether its objects can be achieved at a less sacrifice of time."

We are told that fall ploughing of light soils is universally considered as positively injurious. The soil must be light, indeed, that is injured by fall ploughing. That there is no such universal opinion, is too well known to require comment; I would, however, in passing, ask "Cincinnatus" to inform us *why* it is injurious?

We are further informed, that clay lands ploughed in the fall are heavier in summer, and for once a reason: "Because the frost also decomposes the roots of weeds," &c. The farmer who grows weeds in sufficient quantity, that his future crop is mainly dependent upon their decaying roots for an existence, is a relic of something, whether of a "barbaric age of agriculture" or not, I will not determine; but I would consider him a fitting companion for Bo-Bo and his father, Ho-ti, as described in Elia's dissertation on "Roast Pig:" Bo-Bo accidentally set fire to his father's cottage, in which there was a fine litter of pigs. Both father and son were so pleased with the burnt remains, that "as often as the sow farrowed so sure was the house of Ho-ti to be in a blaze!"

When planting a tree, it is a matter of paramount importance to have the soil in so finely divided a state that every root will be enveloped, and the smallest crevices and interstices filled. It is then surely a question of moment to know how this friability is to be obtained. The cheapest and most effectual *crusher* is frost. Here is the process described, as I find it in a recent agricultural monthly periodical: "The freeing and thawing process is of vast benefit to soils. Investigations go to show that the fineness of a soil is among its best qualities. Some have gone so far as to say that it matters little what a soil consists of, if it is sufficiently fine; that the New England granite soils, if as fine as those of the Ohio valley, would be as good. This may seem extravagant, and probably is so, yet all will

agree that fineness is a most important quality. Now, a December frost, stiffening the ground for eight, twelve, sixteen inches deep, is a silent, quiet operation, but it is one in which an immense amount of mechanical power is exerted. By reason of the expansion of water at the point of freezing, particle is made to impinge against particle by a slow but irresistible movement, both held as in a vice, and pressed against each other, till probably more particles in an acre of soil are broken up, and divided into two, five, or a dozen, than could be effected by the labor of a score of men in a whole summer. Clay soils are rendered less adhesive, and coarse soils (not made up too much of mere sand, that holds no water) are rendered finer by freezing. Throwing them into ridges in autumn, to give the frost greater access, is beneficial." One more extract on this subject: "That which, under the name of oxygen, we are accustomed to consider as a gas, forms, in fact, one-half of what geologists call the whole solid crust of the globe. In the subsoil, it exists in combination with metallic substances, which, when so combined, we call earths. Until they have been brought into free contact with the air, these earths are said, in the language of chemists, to be in the protoxide state—that is, in a state of early oxidation, containing free acids injurious to vegetation; *by free and complete access to the air, the protoxide is converted into the peroxide, a state favorable to vegetation.* Now, farmer, the question for you is how, as speedily as possible, to convert the protoxide into the peroxide—an enemy into a friend. Faring and burning will do it immediately, but at a cost more (perhaps) than the worth of the land. Subsoil ploughing will do it—in eight or ten years, perhaps. *A winter's frost, if your land is well drained, and well worked the following spring and summer, either as a fallow or manured green crop, will do it in one year.*" This is the language of a practical farmer, whose practical success has been often and justly extolled. I would not dwell so long upon this subject were I not convinced, after twenty years' practical experience, that it is of the utmost importance. It has long been my belief that there are few soils actually deficient in inorganic substances, if, by due exposure to the decomposing effects of the atmosphere, their latent principles of fertility were rendered available. This can only be secured by thorough granulation, and, until this is effected, manure applied is as much thrown away as food upon a disordered appetite, or words upon an unteachable mind.

Your correspondent cautions us not to plant a tree in soil "which frost will have a beneficial effect on in the way of rendering it friable." To this I will simply reply, *that a soil which will not be rendered more friable from freezing and thawing, is incapable of supporting vegetation.* His advice to gentlemen who wish to plant in clayey soils, "to go out with a wheelbarrow for decayed leaves and road sand," is so limited in its application that I fear the only gentlemen who will be likely to adopt it are those

*"Gemmen whose lands,
Inclosed all in bow pots, their attics adorn,
And whose share of the soil," &c.*

The impropriety of planting, generally, in such mixtures, I may at some future time notice more in detail.

With regard to the "hard fisted" gardeners, and their astonishment at my advising the abolition of raking soil finely for ordinary seed crops, it occurs to me that they must have a "soft" spot somewhere. All good gardeners know that a finely divided surface will *cake* sooner than when it is rough, and daily act upon that principle.

I feel, Mr. Editor, that I have occupied too much space in replying to the lucubrations of an anonymous novice in horticulture; but since these animadversions are in a measure indorsed by their publication, I had no other alternative than to defend myself, and prove to your readers that my advice is neither hastily nor carelessly given. I now ask your correspondent to point out the errors in my advice to which he alludes in his concluding paragraph, as I am ready to correct any wrong impressions that I may have been the means of creating. So much do I feel interested in this subject, that I will, for the present, waive all the disadvantages I would be under in replying to the carplings of an anonymous writer; but, for the future, all such communications will be considered as unworthy of serious consideration.

VEGETABLE GARDEN.—If the suggestions of former "Calendars," with reference to digging and trenching, have been acted upon, the soil will now be in the best condition for cropping; the ameliorating effects of winter will have left it in a state the most suitable for vegetating seeds. All that will now be requisite in preparing for such crops as carrots, onions, beets, parsnips, &c., is a slight turning up and breaking with a fork, and if done in a dry time, the soil will reduce to a powder. Avoid raking as far as possible. Draw slight furrows with a hoe, and cover the seeds with the same implement, leaving an open, porous surface that will not readily *cake* with rains until the young plants are above ground; afterwards,

hoeing and surface stirring will prevent the formation of a caked surface. One of the disadvantages of a tenacious soil is this liability to harden on the surface after even slight showers; and it is also one of the principal features in the good management of these soils, to stir the surface after every rain. Everything, however, depends upon the time when the stirring is performed. Between the wetting and softening of the soil by rain, and its caking by sun and drought, there is a period when it is in the most favorable condition for hoeing. This is one of those matters in horticulture upon which no definite rules can be given that will be applicable in all cases; the practice that would be suitable for one soil and situation, would be unsuited for another differently circumstanced. In view of the many conflicting opinions which are frequently given in the enunciation of mere practical rules (and which may be either right or wrong according to existing peculiarities), it is a question worthy of more than mere passing notice, whether more real progress would not follow from the promulgation of principles only, leaving every one to deduce the practice for themselves; for it is well known that no amount of explanatory information will compensate for the want of that discriminating knowledge which can only be obtained from practical experience.

Fruit.—In setting out young plantations of raspberries and blackberries, cut down the canes to within a couple of inches of the ground; a young, vigorous shoot will be produced, and the plant becomes healthy and permanently established. The anxiety to procure a few fruits the first season, is prejudicial to the ultimate well-being of the plants.

Currants and Gooseberries.—These should always be grown as miniature trees, on clean stems nine inches or a foot high. In preparing for bushes of this kind, cuttings of young wood about twelve or fourteen inches long, should be selected, and all the buds cut clean out, except the two uppermost; plants from these will never throw up suckers, will be more fruitful, and, with skilful pruning, may be grown as regular and pyramidal as a Glout Moreau Pear on a quince stock. The Black Currant is worthy of more general cultivation; although not a choice dessert fruit, it is the most valuable of all for preserving, particularly for medicinal purposes; it also makes a superior wine.

FLOWER GARDEN.—Plants for the flower garden will now be under propagation, and a liberal supply should be provided, based upon the extent of surface to be planted. To avoid labor in potting, and, also, to economize both in the expense of pots and the space they occupy in a greenhouse or glazed frame, the cuttings of verbenas, heliotropes, &c., when rooted, may be planted in shallow boxes, two or three inches apart, in regular rows; and once a week for two or three weeks before planting out in the beds, run a knife in the centre of the rows, so as to sever the roots; each plant will thus have a small square of soil attached, which can be removed entire, and the plants will start as freely into growth as if they had been individually turned out of pots. There is great opportunity for display of true taste in the arrangement of flower gardens. What is termed the massing system, consists in filling entire beds with one kind of plant, or, in very large beds there may be several distinct patches, but all so distinct and numerous as to be seen from a distance. This kind of gardening is perhaps very appropriate in some situations, but, although we have seen it attempted very frequently, it has never appeared a satisfactory arrangement. It is only suitable for geometrically-formed gardens, and these gardens are themselves in best keeping when connected with a dwelling; the highly artistic character of a geometrical arrangement, and its various accessories, in the shape of vases, fountains, sundials, and statuary, are displayed to greatest advantage in connection with balustrades, terraces, and objects equally artificial in character. Flower beds, when so situated, partake more of surrounding features when distinct kinds of plants are planted in effective masses; and there is certainly an air of refined and artistic beauty in a garden of this style which is not found in the promiscuous planting of ordinary flower borders. But, on the other hand, isolated flower beds or borders are far more interesting when composed partly of herbaceous flowering plants, perennials, and annuals. The old-fashioned foxglove, lily of the valley, larkspur, and mignonette, snowdrops, and grape hyacinth, are surrounded with so many pleasing associations of old homesteads, that we must question the taste that would disband them forever from our gardens.

PLANTING TREES.—Many kinds of trees (among others, the Norway Fir, Arbor-Vitæ, Hemlock Spruce, Maples, &c.) thrive best on a clayey subsoil. Indeed, all plants seem to attain greatest size and age on soils of this description, doubtless because, in them, there are abundance of the special substances they require for building up their structure, and in which light, sandy soils are deficient. The only evil in clayey soils is their liability to retain moisture to an injurious extent, and their frequent resistance to roots. Draining obviates all this.



PINUS LAMBERTIANA.

Stray Thoughts about Cultivation, &c. &c.



HERE is a well known story of a certain Duke, who, on seeing a man ploughing a light soil with four horses one before the other, got off his horse, unhooked the two leaders, harnessed the two others abreast, and ploughed a few furrows out with his own hands, intending to show how easy it might be done with a pair properly geared. "Ah! it's all very well for you that can afford it," said the man; "but those new-fangled improvements are too expensive for a poor man." Jethro Tull found the greatest objections made to sowing artificial grasses, the farmer saying "gentlemen might sow them if they pleased, but the tenant farmer had got his rent to pay," as though sowing clover would disable him from doing so; "yet now," he continues, "the case is so much altered that he could not pay his rent without sowing it." Not a few have heard the same objection urged against the introduction of bone-dust, of guano, of draining, subsoil ploughing, each in succession. It is a mistake to attribute these things to obstinacy, or any unwillingness to adopt an improvement that *can be perceived*; it is in the perceptive faculty that the impediment lies—a faculty that will not act of itself without exercise, any more than that of reading, writing, or playing on a musical instrument.

We are born into a ready-furnished world—a world stored like a granary with the labors of those who have gone before us; and we complacently avail ourselves of the comforts and conveniences that lay ready to our hand, little reflecting through what a travail of human thought, encountered and renewed through successive ages—through what repeated conflicts with prejudice, and even persecution, we have inherited many of those appliances of art, and most of the discoveries of science, which have gradually built up stone by stone, and adapted with so many material comforts, the station that we have reached in the history of human invention. The history of the Useful Arts beckons us to look back now and then upon that long line of road, rough, arduous, and crooked as it is, that lies behind us in the journey of our race to its present point of progress and attainment.

The chart of history is very barren regarding the industrial pursuits of former ages. We ask almost in vain, what was the condition, what the inner history and pursuits of that large portion of mankind who were disengaged, or remote from the rude pastime of hostile conflict with their fellow men. Husbandry must have been carried on without intermission, and commerce must have flourished, though the historian has not deigned to come down from the supposed elevation of the warrior to the level of the masses who labored at home. The time arrives when the *silence* of all records awakens our curiosity more than the high-sounding themes of emperors and kings, whose absurdities fill our books, can satisfy. All natural laws seem to testify to the *slow growth* of whatever is most permanently valuable. The history of Agriculture would, in some sort, be the history of civilization. The husbandman is the persevering antagonist of those elements of international and social disorder, which might seem to present man as the great *disturbing agent* of an otherwise harmonious creation.

We can trace this useful member of the community but rarely with accuracy. The Romans seem to have been the best ploughmen; the furrows were straight to perfection. When any one ploughed a crooked furrow, he was said, *de linea arare* (to plough out of line), which was abbreviated into the word *delilare* (to go wrong or to stagger), whence we derive our word *delirious*. Occasional

glimpses are afforded, but in the main we have but little knowledge of ancient tillage, nor, perhaps, to the practical man is it of much importance.

In the Middle Ages Saracenic Spain seems to have been the best tilled. To this day the traveller in Valencia and Granada, amidst scenes of utter apathy and indolence, varied only by a chronic system of intestine dissension, often meets the neglected remains of a most magnificent system of irrigation, remaining like monuments of the indefatigable labors of a race that has passed away, but carrying with them so lasting an attachment to Spain, that long after their expulsion from Europe, they retained and handed down through many generations recorded titles of their estates, and even the very keys of their houses in the Spanish Peninsula.

There are lost arts undoubtedly, and in agriculture and gardening we are not sure but that sometimes we might derive benefit from the olden times. Mr. Prescott tells us, that along the table-lands of the mountainous districts of Peru, and in dry and unfruitful valleys, the singular practice was adopted of digging what may be called *subterranean fields*; the upper soil was thrown out, till they reached one more moist and fertile, and here, twenty feet below the natural surface, in a sort of sunk hot bed, manured with fish from the sea-coast, or the still more enriching deposit of guano from the islands along the coast, they raised abundant crops of corn and vegetables.

No pheasant in an English preserve is watched with more jealous care than the Incas extended to the sea fowl of the guano islands. To kill one of them, or even to set foot on their island territories during the hatching season, was as much as the life of a Peruvian was worth. Now, under civilized (?) rule, we kill the goose that lays the golden egg, regardless of posterity.

There is scarcely a reflecting mind which does not feel that amongst all the wonders of advanced or advancing science, the greatest wonder is its own infancy; that man should have looked upon nature so long, and known her so little, and that what little we have learnt should have been learnt so lately.

Of all the centuries which make up the history of the world, take away all but the last, and what becomes of that elementary science, little yet valued at its ripe importance, which directs and explains to us the simple elements and constitution of all the matter we behold—of every existing substance that we come into contact with by the aid of our bodily senses, of everything, in short, that we can touch, taste, smell or see, and of a great deal which is not cognizable by the external senses, but only those of the mind, such as invisible gases; where again would be that other science, which investigates the substance of the planet on which we live and move, and which, step by step, interrogates the solid rock, and chronicles its place in the history of creation, by the evidence inclosed in its successive layers of once living creatures, now lying in monumental forms more real than sculptured effigies, and affording by the regular series they present of fossil anatomy and osteology, a complete sketch of the rise and progress of organic forms of plant and animal, antecedent to those we now see around us. Where, again, would be that analytical history of organized matter which explains the growth and structure of all existing forms of life, containing within themselves the principle of increase and reproduction? We allude to chemistry, geology, and animal and vegetable physiology. These three sciences, to mention no others, are each directly connected with the labors and the studies of the agriculturist and gardener; and when we lift our eyes around us, and see the accumulation of results, the realized forms of human comfort and enjoyment, the means and appliances of life, which one or two centuries of discovery in those and other sciences have supplied by their application to every useful art, it is surely a somewhat startling thought, or would be, were we not so accustomed to overlook it, that for

so long a portion of the world's history such studies had no existence; that for ages upon ages human life passed without them.

One of the tangible causes in operation to retard the growth of agricultural knowledge was found in the variety of climate. The easy labors of the Egyptian husbandman afforded little to guide more northern nations under the changed influences of the elements and seasons; every detail was invested by the preponderance of heat and cold, drought and moisture. The progress of the art was checked, as the conditions of its practice varied at every step, and differences of climate were again broken up into smaller areas by varieties of soil. A light soil required quite different treatment from a clay, and what was true of either, a little above the sea, would no longer be true at a height of seven or eight hundred feet. A science can only grow by the observation of *individual facts*. Can it be wondered at that the literature of agriculture should have proved so useless, so apparently impractical, and therefore so distrusted, when every rule laid down was liable to be found false on application; that, like faëry money, what seemed gold in the hand of the giver, proved dust in the hand of the receiver. Thus there was little or no history of agriculture or gardening to write. They are the arts of the world's advanced age; their science is prospective; every day's addition to the population of a country enforces it upon human notice and intelligence by the repeated impulse of daily necessity. Where the active minds of old were intent on cathedral architecture, our scientific men reveal to us the structure of the plant, and give us principles on which to erect our fulcrums of action. The birth of chemistry, a science which unfolds the laws and structure of the soil and the plants it produces, with the phenomena of their growth, must obviously afford an epoch from which all analytical progress in agriculture must take its date. Its practice must be merely empirical so long as its elementary principles are unknown; it was equally useful as the magnetic needle to navigation, or steam power to the mechanical arts. Knowing this, good citizens are now turning their attention to teaching it in colleges, to be disseminated everywhere. The *principles* must be known before true progress can be attained. Cultivation by steam power is now as near being an established fact as the steamboat was twenty or thirty years after Fitch's success. The harvesters and steam-threshers are but the forerunners of modified ploughing.

Causes and effects which were once regarded as purely physical and temporary, begin to assume a wider aspect, a permanence and moral fixity of purpose, which, when regarded by themselves, we had never attached to them. The sustenance, the comforts, the conveniences of life, achieved by art and science, are no longer the mere utilitarian objects of human ingenuity, nor the matter from which they are struck out, things to contemplate independently or for their own sake alone. Physical things, and the sciences which relate to them begin to be invested with a garment of meaning and of purpose altogether new. The drained morass, the fresh-turned fallow, the waving corn-field, the meadow with its herbage interspersed by flowers, no longer stand separately before us as things of mere labor, utility or beauty, or our relation with them the accident of a day. A higher ordinance and appointment, enveloped within the teaching of science, become gradually but irresistibly revealed, binding and disposing all to work together to the greatest ends, not of the individual only, but of the whole family of man; not of his physical necessities, or intellectual pursuits alone, but of his whole relation with that Highest Wisdom whose evidences and attributes are engraven upon the fabric of nature, in characters not of power or knowledge only, but of universal and inexhaustible beneficence.

NEW PLANTS.

ILEX FORTUNII.—There is growing in the nursery of Mr. Glendinning, of Turnham Green, a handsome evergreen Holly raised from seeds collected by Mr. Fortune in China, at a place named Hwuy-chou, where it formed a fine tree, loaded with large berries in December, 1853. In its young state it is much like *I. cornuta*, but in the adult condition it acquires quite another appearance, resembling a very broad-leaved, entire-leaved European Holly. The flowers are unknown, the specimen before us being only in fruit. In that state there is in the axil of each leaf a sessile umbel of from six to ten stalks, each about three-quarters of an inch long; so that, when loaded with berries, it must have a glorious appearance. We can find no description of any Asiatic species (of which there are many) that will apply to this, which we therefore suggest should bear the name of its intelligent discoverer.

LUPINUS MENZIESII (*Mr. Menzie's Lupin*).—A shrubby, Californian Lupin, with yellow flowers. Sent to Kew Gardens by Mr. Thompson, of Ipswich.—*Botanical Magazine*, t. 5019.

EICHOENIA TRICOLOR (*Three-colored Eichornia*).—It has also been called *Pontederia tricolor*. A Brazilian aquatic plant. Its flowers are purple, blue, and white.—*Ibid.*, t. 5020.

BEGONIA LACINIATA (*Cut-leaved Begonia*).—A native of Silhet, Nepal, and Eastern Bengal. Flowers, large, white, tinged with pink. The leaves beautifully variegated, with purple round the edge, and in the centre of the upper surface; the edge and veins on the under surface deep pink.—*Ibid.*, t. 5021.

ILLAIREA CANARINOIDES (*Canarina-like Illairea*).—Native of Central America, and introduced thence to Europe by M. Warszewicz. It is a hardy annual; "but is a very dangerous neighbor, one of the men in Kew Gardens having suffered severely, and for some weeks, from being accidentally stung by it." Flowers, dull brick color, appearing in July and August. It belongs to the natural order Loasææ.—*Ibid.*, t. 5022.

RUBUS NUTANS (*Shaggy-stemmed Raspberry*).—This decumbent species is a native of the Himalaya Mountains, at elevations of from 8,000 to 11,000 feet. It came from Mr. Low, of the Clapton Nursery; but when, or by whom, introduced, is not known.—*Ibid.*, t. 5023.

THE PAMPAS GRASS (*GYNERIUM ARGENTEUM*.)

FROM THE LONDON FLORIST.

WITHIN the last few years, those who were so fortunate as to possess plants of the Pampas Grass, and transferred them to the open soil, have been gratified in witnessing, each summer, the beauty of its long, slender leaves, which form bundles or sheaths at their base, and rise to the height of six or eight feet, when they gracefully curve outward, giving the plant the appearance, at a distance, of a hemisphere of beautifully curved lines. Towards autumn, when the leaves have attained their full development, the flower stems appear from the centres of the strongest sheaths, shooting up perpendicularly three or four feet above the mass of foliage, and gradually unfolding a plume of elegant, feather-like flowers, which at first are of a silky whiteness, but assume a darker tint as the season advances. The striking beauty of this plant in the autumn, was the theme of all who saw it, and a large supply of seeds having been distributed by the Horticultural Society as well as sent out by the trade, the plant is now met with in most gardens of any

repute; it has fully established its popularity, about which there cannot now be a question. We have received from several of our correspondents dimensions of plants under their care, varying from twelve to fourteen feet high, and ten to eighteen feet in diameter, with from a score to fifty heads of flowers. When frosts have occurred in September, about the time when the flower stems appeared, they have injured them, as at that stage they are succulent, and consequently tender, and are also then frequently broken by high winds.

Although the Pampas Grass is not very particular about soil (provided it be open), yet, to insure a rapid growth, a deep, rich soil, well manured, will be found desirable; the plants should likewise be very liberally supplied with water during the period of active growth. The situation should be one fully exposed to the sun, with a dry subsoil, and as much as possible sheltered from high winds, which will sometimes break off the flower stems when young, and thus rob the plant of a part of its beauty. The plant ceases to grow after November, and the frosts of winter will induce a state of rest, and may brown and even kill the upper parts of the leaves, in exposed places, down to the stem; but if the subsoil is dry, no harm will happen, and, on the return of warm weather, a fresh growth will commence. The plant increases itself in bulk by forming a large increase of stoles, or new bundles of leaves, and, with good treatment, soon becomes a large specimen.

This grass has now become cheap, and the question of what can be done with it, may now be discussed more fully than when its scarcity made it a pet, and of course the most prominent part of the lawn or flower garden was allotted it. Although graceful in the extreme, we cannot bring ourselves to consider the flower garden as exactly the place for this grass. From March to July there is nothing in its appearance that can be considered ornamental; after the latter period the growth is very rapid, and it is then that its claims to an ornamental plant can be fully appreciated. We intend selecting an open site for it, backed up with evergreens, against which the appearance of its silvery plumes would admirably contrast; it might also be formed into groups on the margins of lakes or running streams of some magnitude, for it would be bad taste to plant so grand a thing near a small pool or puny brook. If planted near water, the ground should be elevated above the ordinary level; for, unlike our *Carexes*, this is not a bog plant, strictly speaking, but is found in a state of nature inhabiting the vast *pampas* (whence its name) of Buenos Ayres—level plains extending for hundreds of miles in La Plata, and reaching from near the shores of the Atlantic to the foot of the Andes. On these immense plains (which contain but few varieties of plants, and scarcely any trees or shrubs) vegetation is exposed at times to extreme alternations of drought and floods—the *pampas* presenting, at certain seasons, all the appearance of a dry and parched vegetation, and, at other times, of almost unequalled verdure. The period of blooming in this country corresponds with the summer of its native land, and we may infer from its native habitat that a sunny, open exposure, with a dry state at the roots while in a dormant state, and an abundant supply of moisture while growing, will very nearly approximate to the conditions of its native climate.

The Pampas Grass may be propagated by division of its numerous stoles, with a piece of root to each, or by imported seed (for we do not imagine, from its season of flowering in this country, it will ripen any seeds here), which should be sown on the surface of broad pans or boxes filled with sandy peat. The soil should be kept moist and shaded, when the young plants will soon appear, and may be pricked out into other pans till they are large enough for transferring to the open ground. Botanists describe the *Gynerium* as being diœcious, or having

male and female flowers on different plants; the male flowers being wanting in size and brilliancy of color, any plants found producing them should be destroyed, as the propagation of the female or more ornamental variety is easily effected, and plants only from this kind should be made use of.

By way of helping our description, and to enable our readers better to judge of the effect produced by the Pampas Grass when in bloom, we append a woodcut



of a plant growing in the beautiful grounds of Stoke Park, the seat of the Right Hon. H. Labouchere, and long the elegant seat of the Penn family of Pennsylvania celebrity.

That plant of this grass is one of a lot of seedlings raised in 1854, shifted into an 11-inch pot in the autumn, and wintered under glass, merely keeping the frost from it. It was planted out in May, 1855; it grew luxuriantly, and, in October, 1856, it had eleven fine spikes of flowers, and, in the present year, it has forty-two spikes, from ten to eleven and one-half feet in height.

The subsoil, where it is growing is gravel to within a few inches of the surface. A pit was taken out for it three and one-half feet in width and two feet deep, and filled up with loam, with a mixture of charcoal and well-rotted manure.

[Mr. Buist thinks this grass not hardy at Philadelphia; for the South it will certainly be very valuable.—ED. H.]

SALVIAS, &c. &c., AND THEIR CULTURE.

FROM THE LONDON GARDENERS' CHRONICLE.

THESE are very important adjuncts of the plant-house in winter; indeed, indispensable. The best kinds for winter work that I have met with are *S. splendens* and *S. Gesneriflora*; the *S. fulgens* may also be added. For winter blossoming, these are valuable, and their culture very simple. They should be propagated annually by cuttings in March, got speedily into small pots, and receive high culture in the greenhouse or a frame. In order to render them bushy, they must be frequently pinched; and, indeed, this pinching may be continued up to the end of June, when they may be allowed to form heads for blossoming. They may be flowered in seven-inch pots in perfection, although it is very convenient for some purposes to have a lot in five-inch pots also. By the middle of June they should be placed out of doors in cinder ashes in a very sunny situation, as they abhor shade, and all they require during the summer is regular watering. In the end of September, they should be placed in a cold frame for fear of frost, or, if room, on the front shelf of a greenhouse. No pinching may be allowed after this. A few remarks concerning soil are necessary. Most of the *Salvia* family run too much to leaf, and are apt to become long-jointed. Now, the elements that conduce to this habit are rich soils, too much air moisture, and a want of light. These evils, therefore, must be avoided. For compost, nothing is so good as a plain, strong loam; this, with sound drainage, will be found to grow them shorter-jointed, and more compact, and will enable them to withstand an hour or two of drought without suffering. In all their stages they require full exposure to sunshine, and, when approaching the blooming condition, simply a cool and an airy situation in the house.

AGERATUMS.—These are very useful as winter flowers, at least through November and December. They are best from cuttings struck in July, which, with proper cultivation, will become nice stock plants by the month of October. They must be frequently pinched in order to render them bushy, and may be finally established in five and seven-inch pots. The stopping, or pinching, must cease after the beginning of September, and all they require after is a cool situation on a greenhouse shelf, or in a frame.

GESNERA ZEBRINA.—This is a stove plant of great beauty, much admired for its zebra-like foliage, as also its brilliant scarlet flowers. The plant sinks into a state of perfect rest after the manner of the *Gloxinia* family, and the dry roots must be taken out of the old and dry soil in March and repotted. This plant requires a generous soil, one composed of equal parts of sound loam, old manure, a free peat, and some silver sand, will suit it well. The chief thing is to give it plenty of heat; few plants enjoy more. To grow it in high perfection, with

vivid coloring, from 70° to 80° are necessary. Another point is to allow it plenty of air moisture. Bottom heat is of great importance too, especially in the earlier stages of its growth, 70° to 80° if possible. Most of this tribe enjoy a partial shade, or, at least, are averse to intense sunlight, which is apt to deface the foliage. All possible care should be taken at all times not to injure the latter; therefore, when moved, cautious handling is necessary. When in blossom, they will do very well in the very warmest spot of a greenhouse, although an intermediate house would suit them better.

CYTISUSES.—This family is well known as a most useful winter shrub, some kinds very fragrant, and being evergreens, they are particularly desirable. They are propagated with facility by cuttings in the spring. But these cuttings, with every appliance, will require a second season's growth to make them into nice little plants, or, in other words, to commence blooming fairly. They become annually finer, and, of course, larger, until, of course, in a few years, they become too large and too coarse for ordinary purposes. Their soil may be two parts a sound loam and one part peaty material. Their culture otherwise is very simple. They are essentially greenhouse plants, but will endure low temperature readily; absence of frost, however, is requisite. But to have them blossom through the winter, a little coaxing at the proper period is requisite. The best plan I have found out concerning them is to treat them on a similar principle to such things as Camellias, viz., to force them into early growth, pinching away freely all the while, and after accomplishing this, to turn them out of doors in a half shady situation at midsummer, housing them again by the middle of September: this I say with regard to winter blossoming. But they must not be coddled; they must have a light situation, with a moderate temperature. Perhaps *C. racemosus* is one of the most useful, but there are several species so much approaching each other, that they are a little awkward to distinguish. I may add that they are very useful for bouquets.—R. ERRINGTON.

CAN PEARS BE PROFITABLY GROWN FOR MARKET?

BY LEWIS F. ALLEN, BLACK ROCK, N. Y.

AFTER reading the glowing accounts which have been given in the many pomological discussions of the fruit meetings and conventions which have been held in different sections of the United States for ten years past, of the profits of pear growing, one unacquainted with the subject would think the above a very strange question to ask of the orchardist, particularly the pear cultivator; yet it is asked in all sobriety and earnestness by one who has not only attempted to be a grower of the fruit himself, but is well acquainted with many men who have attempted it and failed, and others who have succeeded to a limited extent, and can answer for themselves in the affirmative, if they choose, and this over a very considerable extent of country for the number of years enumerated.

Ten years ago (drawing my conclusions from the numerous articles I had seen in the *Horticulturist*, then edited by the late A. J. Downing), I became almost enthusiastic in favor of pear culture, and having succeeded quite tolerably in a number of young trees which I had planted some years earlier on their own stock, I planted out about five hundred young pears budded on the quince, as dwarfs, and added two or three hundred standards on their own roots. The land on which I planted them was new—that is to say, it had been but a few years reclaimed from the forest. It was a dry, clay loam, with a gentle descent to the east, passing off its surface water, rich in phosphates and the food of orchard trees. Apple,

pear, and quince-trees, had already been planted in adjoining grounds, and as like soils all about me had for many years produced their fruits successfully (the pear but so-so), I had little doubt of full success in my new enterprise. I had raised the best crops of corn, potatoes, other roots, small grain of different kinds, and grass, on the land, and could have no doubt of its perfect adaptation to the growth of the pear, either on its own stock or the quince. I obtained my trees from established nurseries, the varieties various in kind, and the trees themselves "warranted good." I had the ground thoroughly prepared by a previous potato crop, and deep ploughing; the holes were large; the whole work was properly done in planting. *I know how to plant a tree*, and every one was set by my own hands, so far as preparing the tree, placing it in the ground, and finishing the work, was concerned, having assistance only from my men in filling in the earth over the roots. For two or three years afterwards, root crops were cultivated among the trees, with plenty of good stable manure, and many of them grew well. The trees produced fruit, more or less, the next year after they were planted, and so continued to do while they lasted; they were properly pruned, and, three years after planting, the orchard was laid into grass, but dug every year thoroughly, for four or five feet in diameter around the roots, and manure well forked in. I say *many* of the trees grew well; some of them did not grow well. They soon became diseased, and died, or looked so unpromising that they were taken out and replaced by others obtained from the nurseries. Various ailments, however, were continually occurring among them, and within five years after first planting, I had replanted about the whole number in the orchard; not every tree, understand, but equal to twice the original number in the whole. Occasionally, a doubt would arise whether my pear enterprise was to be altogether successful; but I was continually reading the *Horticulturist*, the agricultural papers, and the proceedings of the pomological meetings, which I sometimes attended, as well, in which all the new and enthusiastic pear growers seemed to be moving in the full tide of successful experiment. I occasionally invited my pomological friends to see my orchard, who, as they looked over it with me, admired some of the trees, shook their heads at others, asked many questions, and "*hoped* I would succeed." Some of them now and then ventured to inquire whether I had taken care to give them good cultivation, and wondered why some of the trees should look so thrifty, while others looked so bad, and "*had their doubts*" about them; yet some of the trees continually kept dying. A few would be attacked with a blight in the bark, showing black blotches on their trunks, near the root; they were planted mostly with the quince wood very near, or altogether under the ground. Others stopped growing altogether, stood stock still, but still lived. Others, again, would spot all over the leaves; and occasionally the fire-blight would take a hop-skip-and-jump, killing outright a dozen or so in different parts of the ground, and letting the rest alone. They were well cultivated. *I know the fact*; and never took half the pains with any other fruit-trees that I did with that pear orchard. My apple and quince-trees, on their own stocks, which stood near them at the same time, grew well, flourished, and bore fruit in abundance. And so did many of my pear-trees, on their own stocks; yet these latter, even, in far too great numbers, which were immediately adjoining the dwarfs, died out. But the story was soon told. In the winter of 1855-6, myriads of field mice infested my grounds; the snow came in hurricanes of depth and drift, and when it went off in the spring, almost every one of my once promising and hopefully nursed trees was thoroughly girdled by the mice, and the trees as dead as if a fire had run through them! Though sadly cast down at this unlooked-for termination of my labors, I confess that I felt a relief from any further anxious and unrecompensed labor in that line;

and thus ended *my orchard* pear cultivation. But I will still further explain: I had the "best varieties" for dwarf culture in my assortment—all taken from "the authorities" laid down in the books and the "conventions." I had about fifty of the finest "Dutchess" I ever saw, which I got when but a year from the bud, when I planted them in a nursery row in the garden, where they grew beautifully for three or four years. I carefully lifted them, with large balls of earth on the roots, laid them on a wheelbarrow, took them to the orchard, and planted them carefully; yet they never grew any afterwards, and bore but a few indifferent pears.

"Very well," may say my readers. "But one swallow does not make a summer, and others may have done better." Let us see. I can now number up twenty or thirty of my friends and neighbors who commenced pear cultivation about the same time with myself, and if not so extensively, quite as enthusiastically and hopefully. We then had a horticultural society in Buffalo. We held frequent meetings and discussions, compared notes, visited each other's grounds, showed our fruits, and did a great business—in the future. We had diverse soils, exposures, cultivations, and all, to pretty much the same extent, according to numbers, suffered in loss and calamity; and the upshot has been, although the mice injured their trees but slightly, compared with mine, as they were more "in town," their orchards (which were planted in fifties and hundreds) now show but a few scattered, dwarfish trees, promising little for the future, and not worth attention, only for the purpose of a few family fruits. Out of the whole number who started so enthusiastically in the pear line, I know but one who still shows any confidence in the dwarf pear, and he, I imagine, more out of a constitutional obstinacy in never confessing to an error than from any success he has achieved in their culture. Every other one of our *coterie* either blurts out the fact that "dwarf pears are a humbug," or drops his head, and says nothing, when asked "how his pears are getting on?"

Nor is this all. The same result has occurred with scores of other pear growers between this and Albany, all along through the best fruit sections of New York, three hundred miles in extent. I attended the annual meeting of the Society of fruit growers in Western New York, at Rochester, last January, and among all the fruits exhibited saw not a dozen good specimens of winter pears, a few very moderate Vicar of Winkfields only. So, at the late meeting of the New York State Agricultural Society at Albany, where a very creditable show of winter fruits was made, *one* solitary little plate of imperfect winter pears was seen. A winter pear, indeed, is of little account any way; they are cold and watery, and but little better as a *winter* fruit than a melon. And such is the result of the millions of dwarf pears which have been planted out within the last dozen years in this great fruit-growing State of New York, where the result ought to be—if there were anything at all in their cultivation—any quantity of the finest of winter pears, Nelis, Beurré D'Amburghs, Glout Morceaux, Easter Beurrés, and others in market at their proper seasons! There are exceptions to all this disappointment and desolation, I admit, but only enough to make good the adage, that "all general rules have some exceptions." Summer and fall pears, in the proportions which have been cultivated (so far as I can ascertain), have fared no better, except in *close garden culture*, where, with but a few trees in each, they *may* have done better; but even with them a large majority of the cultivators have condemned them. But they do it quietly, and don't care to make a fuss about it.

With standard pears, the success of one orchardist has been various. Disease has carried off the majority of them, in one shape or another; blight, in its various phases, has been the chief scourge, particularly with the finer varieties. Wildings,

which are hardly worth cultivation without working with the better varieties, have sustained themselves the best; but even they have been cut down to a considerable extent, wherever planted. Some districts I can name where they once flourished, but now scarce a pear-tree can be found, old or young; while the apple, peach, cherry, plum, and quince, thrive under equal cultivation. So far as my own observation extends, therefore, the pear, as an orchard fruit, *does not succeed*. At all events, numerous standard pear orchards have been planted out in Western New York within the last ten or twelve years, and I know of not a single one which is now *full*, or even *half-full* of trees as they were first planted; and if any orchardist has succeeded with the pear as he or others have done with the apple, peach, and other orchard fruits, I should be pleased to know it. Among all the numerous inquiries which I have made, the fact has not yet been ascertained. There are many large, grand, old pear-trees scattered throughout the country, some of them over a hundred years in age, and bearing large crops of *poor* wilding fruit every year—the remnants of orchards, their fellows having died out a great many years ago, so long ago, indeed, that but few living people remember them; but they only prove that the pear, even as a standard, only *occasionally* succeeds, instead of being a *reliable* tree for orchard culture. Men may *theorize* as they please as to the causes of their decline; I simply state *facts*, such as they have come to my own knowledge. I believe that I have succeeded quite as well as the average of those who have tried them, having now upwards of twenty quite fair standard trees about my house, growing in a strong, clayey-loam soil, and bearing, more or less, very good fruit every year; they have thus far escaped the blight, while some of my neighbors, chiefly on lighter soils, have been terribly scourged by that disease, and lost many of their best trees. I consider the pear much safer on its own stock than on the quince; yet, having no prejudices in this matter, and speaking only from my own observation, I freely admit that there may be localities in the eastern part of Massachusetts—about Boston, for example—where the pear, both on its own stock and on the quince, may thrive and be profitable for orchard cultivation. The statements of such pomologists as Col. Wilder, Mr. Hovey, Mr. Maning, and others there who say that they succeed in their cultivation, are not to be controverted with hypotheses or denial, at least by me. I only say that their locality is a fortunate one; for I do not believe that they have cultivated their trees any better than many others have done in other localities where they did not succeed at all.

The Profits of Pear Culture as a Market Fruit.—In looking at the remarkable statements which have been made at various times in the fruit conventions, and reading them over again as they have circulated in the periodicals, one would suppose that the profits of pear growing were enormous. The statements which have usually been put forth, relate to *single* trees in a favorable place, or to a *few* trees only, and in a bountiful year. The *average* of years would tell a far different story; and having experienced the same variations of success in my own cultivation, and seen it among my neighbors, warrants my own belief as to the *facts*. Forty years ago, when a boy, I saw beautiful Virgalieus selling in the New York markets, at the fruit stands, for two or three cents each, then the only really *choice* pear; now the Virgalieu is seldom in market, having been attacked almost all over the country, and *on all varieties of soils and situations*, with spot, and crack, and shrivel, and blight. Nor shall I allude to the cause of this recent disease, for nothing is yet known about it, other than that it exists; and although various cures have been suggested, the Virgalieu still suffers, except in some favored localities. That fruit, therefore, cannot be longer relied on, at present.

Within a few years past, other good varieties, as the Bartlett, Dutchess D'An-

gouleme, Winter Nelis, Stevens' Genesee, Vicar of Winkfield, a variety or two of Summer Pear, and others, have been seen in the markets, and sold in their seasons at from a cent or two to five or six cents each, possibly more in a few instances; but large sales at the latter prices are not frequent. Bartletts—the best market pear we have—are seldom worth over three dollars a bushel, and must be good specimens at that. Virgalieus, when *really* good, will bring five to six dollars a bushel. Seckles, better flavored than either, are worth no more, and, from their inferior size and color, unless the buyers *know* their excellence, will not sell for near as much. Indeed, the size, color, and appearance of the fruit, help the sale far better than flavor, and one may talk of “flavor” in an ill-looking pear to all eternity, and the public won't buy it. A *good-looking choke pear* is better, with them. We never could get over three dollars for our Bartletts in the very best samples when our orange pears, not good for the table compared with many others (yet are the very best for preserving), will sell for a dollar and a half to two dollars. In fact, so obtuse are the public to pear flavor, that a wilding will sell for nearly as much, in large quantities, as the best of other varieties, with no better looking *outside*; while in bearing, they will yield double or treble the quantity on the same sized tree. I met a friend the other day who had a few bushels of well-grown Vicars, which he sent to market some weeks ago, and could not get two dollars a bushel offered for them in a city of over eighty thousand people! He grows more pears than any one else about here, as he says, and only gets three dollars for his best Bartletts, which don't pay for growing, taking the seasons as they run. In fact, the only men about here who make any money by their pears, are a few farmers having large, old, wilding trees, which give large annual yields, and sell at about a dollar a bushel on the average. I have a single tree of the orange pear, thirty odd years old, which gives me an average annual yield of about eight bushels, worth more to me, at market, than all the others put together, expense of cultivation considered. How an *orchard* of them would succeed, I don't know; for although the single tree I have is healthy, a score or two of them might fail in part, or wholly. Still, I would rather risk them than any others I have ever tried; and they are a better fruit, every way, than the overpraised Vicar of Winkfield.

Now, the above is right in the teeth of all the flattering stories we so often hear of the “profits” of pear culture; and if anybody has a better story to tell, I want to hear it. Don't be afraid, gentlemen; you won't raise competition enough to damage your business. Our fruit markets are as lean of *good* pears as of fresh figs or pine-apples, although millions of trees have been planted within the last dozen years; and if those who have planted are fortunate enough to secure a good supply for their own tables throughout the pear season, they are to be congratulated.

Now, after all this flat-footed confession, a great many people may set it down as the grumblings of a disappointed man. Be it so. I have only told my own experience, and the conjugated experience learned from others. It is useless to say that we have taken no pains with our trees; that they were not properly cultivated and pruned. It is not so. Not half the pains have been taken with any other fruits we have cultivated. Cutting back, scissoring, pinching, and all the thousand and one “peddling” devices of the savans have been resorted to, and failure, so far as anything beyond a very partial success, in a few instances, has been attained, is the grand result. Men are inclined to let their *success* be known to the world, but of their *failures* they incline to say little.

“Well,” it may be asked, after all this discussion, “do you recommend us to stop growing the pear altogether?” By no means. If you have a favorable soil

and locality, grow the pear for your own use, and the market, too, if, on trial, it succeeds. Grow the dwarf, even in your garden, but not elsewhere, and plant out standards at large, and make the most of them. I conceive the great objection to the dwarf to be, that the quince and pear woods are so diverse in formation that the open-pored wood of the pear will not closely unite with the compact and smaller-pored wood of the quince. Consequently, they are subject to blow off, when they get to any size, for want of adhesion, which, on examination of such cases, will be found never to have intermingled their heart-sap; and in other cases, after growing a few years, they will stop further growth altogether. In these last, examine the connecting point of the two woods, and they will be found to adhere only at the bark, and perhaps a small portion of the sap-wood, while the original stocks will no more be joined together like an apple or pear, worked into its own wood, than a pine knot which falls out of a board as you are nailing it up, joins to the grain of the main wood. Aside from this difficulty, dwarf-trees require *quince* culture in a *quince* soil, which are far from being so universal as pear soils are.

A long story, and a very useless one, I fear, Mr. Editor; but as the spirit moves, I have felt disposed to tell you my experience.

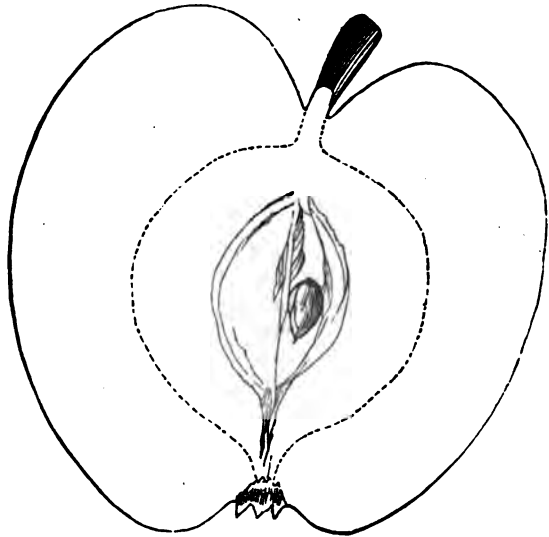
HOLMES'S SWEET APPLE.

BY E. S. HOLMES, WILSON, NIAGARA COUNTY, N. Y.

BELOW I give you a sketch of a sweet apple that is considered a great acquisition to our winter sweet apples in this vicinity, where it originated.

History.—The original tree was produced from seed saved by my maternal grandfather (Judge J. Taylor, of Charlton, Saratoga Co., N. Y.) and family, and brought by my father, Daniel Holmes, of Wilson, Niagara Co., N. Y., and planted where he now lives, forty years ago. From the product of those seeds he planted his first orchard, but subsequently reheaded by grafting all the trees except the one that produced this apple. This proved so good that he not only saved the original tree, but also had several others grafted with scions from it. He has also distributed scions to a limited extent.

Description. — Tree, a vigorous grower. Young shoots, a dark brown, with a slight reddish tinge, and partly covered with a slight fuzz. Fruit, medium size, conical, and frequently a little one-sided. Skin, a waxy yellow, resembling the Porter, with a red cheek when exposed to the sun. Stalk,



medium in length and size, inserted in a rather deep cavity. Calyx, open, set in a shallow basin. Flesh, yellow, tender, rather juicy, rich and sugary, with a slight spicy flavor—superior for the dessert, and unsurpassed for baking. A good bearer, with a tendency to overbear every other year. Quality, best. Season from November to February. The fruit is called here the *Holmes's Sweet*.

THE GRAPE AND ITS CULTURE—IN-DOORS AND OUT.

BY WM. CHORLTON, NEW BRIGHTON, STATEN ISLAND, N. Y.

To say that the grape-vine is as old as the hills, or that the varying arguments of ancient and modern cultivators respecting the individual modes of treatment are infinite, would be going a little too far in assertion; but we may affirm that it is one of the oldest purveyors to man's gastric appetite, and possesses a separate longevity equal to any other known plant, when nature has accidentally placed it in a region and soil congenial to its constitution, or man has cultivated it in an uninterruptedly sensible manner. We have no records of a grape-vine dying out of old age under such circumstances, while we have plenty yet in their prime that verify the above presumption. These instances are, however, known to be beyond the controlling influence of that mystification and opinionative narrow prejudice which leads some people to believe that, because the grape-vine will for a time devour the strongest and most filthy of manures, it is absolutely necessary to supply such materials *ad libitum*. Put common-sense to reflect upon what one of the most extreme advocates for such nuisances recommends, and see how it looks. Besides advising "a soil made up of ordinary richness with leaf-mould, dung, and so forth, we are to add *one good horse or cow to every ten square yards*," cut into pieces, and applied *fresh*. Now we admit that the grape-vine is one of the greatest gluttons there is in the vegetable kingdom, when the leaves are in an atmosphere conducive to vigorous development, but, like an over-fed fat hog of limited age, there is not "bone and muscle" enough furnished, in the mean time, to support the wear and tear of the natural lifetime of the subject. "Big talk" often comes out of such results for a time, and immense bunches of watery fruit are occasionally produced; but watch the progress for a number of successive years, and our word for it, such gorged gluttons will become much weaker, and more predisposed to disease and barrenness, than where the true constitutional habits have been cared for. The plain fact is, there is nothing mysterious about the cultivation of this plant, neither is there any other that will bear a greater amount of ill-treatment, and again recover. We have said above that the grape-vine is a plant of great longevity; yet some of our cultivators, both in the vineyard and under glass, consider it necessary to replant after a few years of bearing, because, according to their belief, the vines are worn out. Now if we find that, under different circumstances, certain individuals that have received more rational treatment are known to be hundreds of years old, and are still as healthy as they were a century ago, also continuing equally fruitful, and that fruit of the best quality, it stands to reason that there must be a screw loose in such experience somewhere. To secure this robust old age, and the consequent profits arising therefrom, it becomes requisite to consider the true nature of the plant.

First. It is always found to be most at home in a tolerably rich upper base abounding in vegetable matter impregnated with limestone, and accompanied with a well drained subsoil. *Second.* It is a rampant grower in all its varieties, producing a large volume of branches and leaves, the latter of which respire and perspire very freely, and act by drawing up and elaborating the juices from the

roots, and also absorbing the moisture and gases in the atmosphere. According with the amount of surface in these leaves, and concentration of action under the influence of steady heat and light, so will be the corresponding ratio of roots and wood healthy, and of permanent structure, or otherwise. Such being the case, it is easily seen, that if the extension of growth be unduly encouraged by over-rich compost (more particularly while young), the cellular and vascular tissues will become deranged by the excitement, and neither roots nor branches partake of the indurated character they ought to. Added to this, we have, generally speaking, more close pruning practised not only in winter cutting, but summer shortening, also, on this fast growing vine than any other fruit-bearing plant. Recapitulate the circumstances, and in the first place we force a plethoric growth by stimulating manures, and afterwards the plant is prevented from performing its proper functions by being permanently cramped into a comparatively very small superficial surface. How, we may ask, is such a being to form an increase of hardened woody fibre in the roots, or how is it possible that they can continue to have strength enough to be vigorous absorbents of the fluids around them? The finale speaks for itself. A premature imbecility, with the consequent tendency to mildew, shank, dry rot, decayed roots, and all the other known and unknown diseases we have to complain of.

To come more practically to the point: Either in the grapery border or outdoor culture, it is indispensable to secure a free passage for the surplus water from the subsoil by good drainage. Make choice of good, friable soil enriched sufficiently with decayed barnyard manure and vegetable mould, and if crushed bones are to be obtained readily, add a portion. No harm will be done by these latter, and no proportions need be given. If the flesh is not on them, they will give out very slowly, and prove permanent. Much as has been written, and many as have been the arguments respecting the composts for grapery borders, I speak with confidence and from experience in stating that better grapes may be grown by simple double trenching, with good drainage, and the addition of a reasonable quantity of the above-mentioned material than are frequently obtained by the most fastidiously formed and ruinously expensive beds that are too often compounded. The following will prove a most efficient bed when the best results are desired:—

Dig the border clear out from fifteen to twenty feet in width, from the base front of the house, and two feet six inches deep. Let the bottom level slope somewhat towards the outside line, along which excavate another foot deeper, and the same wide. Fill this drain with rough stones or other such material, and cover six inches of the same over the whole base. If the soil taken out, or any portion of it, be of good quality, reserve it, and mix one-fourth in quantity of barnyard manure and decomposed vegetable matter with one bushel of crushed bones to every cubic yard in bulk. Whatever quantity of earth may be required besides that taken out, procure it from a pasture of friable loam, and use only the upper turf sod. Cover the drainage base with these sods, also, and fill in the prepared compost to one foot above the ground level.

Planting, Training, &c.—Choose for all purposes healthy vines of one or (at most) two years' growth from the cutting or bud. For outside, make a hole three inches deep, and level on the bottom; spread out the roots carefully, and fill up with well broken soil. In the grapery, smooth the surface, and cover over the roots so as to form a small mound around each stem, which may afterwards be shortened down to two or three buds. When these buds have grown some two or three inches, take out all but the strongest. Train this carefully to the wires or poles as it advances in growth, and pinch out the laterals or side shoots

to the first leaf as they continue to be produced. If the weather be dry and hot through the summer months, mulch the ground with littery manure, and give occasionally a copious supply of water to the roots. Do not stop the leader until the wood begins to turn brown in the fall.

One of the best methods for future training, outside, is to conduct two shoots horizontally, one on each side of the main stem, and eighteen inches from the ground level. This may be secured for the present by cutting down to two buds above that height. These, in the spring, will push out the desired branches, which may be allowed to grow as the single one did last year. Next fall, cut them in, to four or six feet, according as they have grown strong, or the reverse. The third year from commencement they will develop side shoots, which are to be trained up perpendicularly to the trellis at the distance of eighteen inches apart. More than enough will be produced, the surplus of which should be rubbed off as soon as it can be seen which are the most suitable to leave. One bunch of fruit may now be allowed on each of these uprights without injury. The following fall, every alternate cane is to be cut down to one bud, the others being shortened in to five or six feet, and left to bear. And now begins a regular course of pruning. Those that have borne the last year are to be cut down to an eye, and the others that have emanated from the previous single bud left for fruiting next year. It may also be mentioned that a greater longitudinal surface can be gained in after years by extending the horizontal branches in like manner.

For the Grapery.—In the fall of the first year, cut down to five or six feet, and in the spring following, keep the heads curved downwards until the buds have burst. The object now is to form a future handsome plant. Leave each side shoot, eighteen inches asunder, and rub out all the others. Train the uppermost perpendicularly, to be practised on the next season in like manner. It is expected, in this case, that the vines are some three feet asunder, and as we want to extend our lateral surface individually, they will, after a time, be too near each other. Let the alternate ones bear a good crop, and after the fruit is removed, take them out. Prune the side shoots of those left to six or eight buds; lay these in horizontally, and cut their side spurs to two buds from year to year, and so proceed and extend, reducing the number of plants, but increasing in surface those intended to be permanent.

Many persons set out upon the principle of caring little how a grape-vine gets along for the first two or three years, believing that it must arrive at a certain age before being allowed to bear fruit. It is high time for such doctrine to be repudiated. Commence at the beginning with good treatment, and no fear of after results, if the same liberality be continued. While I would not, by any means, advocate the over-cropping of a grape-vine, we certainly must contend that it will give us a taste of its sweets, without injury, after the first season, providing it has had justice done to its accommodating disposition. Not so, however, if otherwise; and at no time is there anything to be gained by over-cropping. Be guided in this particular by vigor and well ripened wood, and let no temporary greediness lead you to depauperate a healthy constitution. Increase the weight of fruit rather according to judiciously gained extent of surface than the age of a limited *stump*.

Inside of glass houses, we have great control over the injurious effects of our sometimes perverse climate, and owing to which we have to grow the foreign varieties in such structures. Here we can imitate an atmosphere congenial to their well-being by gradually raising the temperature, as development proceeds, from 50° to 100° (which is none too high at midsummer), in the daytime, with sunshine, increasing the moisture in accordance with the heat, and, afterwards,

as ripening progresses, dry off and lower down again to our wishes. But, out of doors, we have not such protection; and, notwithstanding our natives have a hardier habit, we ought to do what we can to assist the grateful plant, and enable it to repay us for kindness administered. Instead of allowing the branches to grow at random, thin out through the summer all superfluous and over-crowding growth. Do not take off the leaves, but remove entirely those branches that are not wanted for the future, and stop the ends of all laterals from time to time, as they push forth anew. In dry and sultry weather—at the beginning of summer—a washing with the syringe, of an evening, will be serviceable, and encourage a free circulation of the juices, besides assisting to keep clear of insects; and a good drenching at the roots will also do good under the same circumstances. Always bear in mind that a grape-vine flourishes best in a climate where the fore-part of the season gradually rises in temperature and moisture to a tropical bearing, and an after dry and warm fall. Imitate this as near as you can, and if the roots are in a right base, with proper fertilizing material, there need not be any fear of failure.

As these few remarks are more particularly penned for the guidance of the amateur and those who wish to be their own grape growers, there is no use in giving a long list of varieties. The following are of the best quality, and the most profitable:—

FOREIGN VARIETIES.—*Black.*—Black Hamburg, Black Prince, Zinfandel, Prince Albert, or Black Barbarossa. This last will not fruit freely if pruned in close. Let it extend the growth each year, and it will prove the best late keeping grape we have.

White, &c.—Chasselas Fontainbleau, White Frontignan, Royal Muscadine; and where fire-heat is used, Muscat of Alexandria, and Cannon Hall Muscat.

NATIVES.—*Black.*—Isabella, Concord. *Greenish-Amber.*—Rebecca, Diana. *Chocolate.*—Delaware.

THE TRENTHAM BLACK GRAPE.

THE difficulty of keeping grapes with a good bloom on the berries, and free from shrivelling, through January, February, and March, is well known. The common Black Hamburg, under particular circumstances, may be obtained in fair condition up to the middle of February; but, generally speaking, the berries get mouldy, and begin to decay in December, and even earlier than that, if the least damp is allowed in the house. The St. Peter's is a valuable keeping grape, vinous, but with more acidity than the Hamburg, and with a better color and finer bloom than this latter grape usually attains; but even this requires great care, or it will crack, and become mouldy in damp weather, and the least over-firing causes it to shrivel. The Barbarossa is a fine looking grape, but takes somewhere about twelve months to ripen it properly, and then, besides being a fickle bearer, it is only second-rate in quality. Having seen and tasted Mr. Fleming's grape, we are of opinion that it supplies a *desideratum* wanting in this class of grapes, or, to say the least of it, it will form a very useful addition. The quality of the variety is very rich and vinous, with a full, syrupy flavor. It is, we understand, a most productive bearer, and, as Mr. Fleming observes, appears as hardy as a currant; and that it may be kept for a very long period after being ripe, we have ample testimony. The footstalks of this grape appear to retain their vitality long after the berries are ripe, and no doubt it is owing to this property that the Trentham Black keeps fresh and plump long after other grapes with less vitality decay or shrivel.—S., in *London Florist*.

DESCRIPTIVE LISTS OF THE BEST CINERARIAS AND LANTANAS IN CULTIVATION.

BY DANIEL BARKER, SPRINGFIELD, MASS.



AS the collection at this establishment (Mr. Bliss's) is now in fine bloom, and being the best time to notice them, without trusting to memory, I will describe a few of the new with some of the older varieties, such as should be grown in all select collections:—

CINERARIAS. *Sir Charles Napier*.—This is decidedly the best blue which has come under my observation. Shape of flower, and habit of plant, first-rate; a splendid variety.

Lady Paxton.—White, with beautiful lilac-purple margin, with dark disk petals, well formed, and producing large, compact heads of bloom; one of the best in cultivation.

Admiral Dundas.—A very beautiful variety; white, with pale blue-purple margin, and of excellent habit.

Optima (Hopwood's).—A charming variety in color; it is clear white, with broad, crimson margin, dwarf and beautiful habit. An excellent exhibition variety, and should be grown in every select collection.

Rosy Queen (Bliss's), is a very attractive variety. Color, white, with a broad, rosy-crimson margin. Habit, very dwarf.

Magnum Bonum.—A splendid variety. Color, a rich purple-crimson, with a small, clear white ring around a black disk. Habit, first-rate, and, for exhibition purposes, unsurpassed.

Lablache.—A good variety for exhibition. Color, light blue. Habit, dwarf, and first-rate.

Queen of England.—A fine and beautiful variety. Color, clear white, with a beautiful, bright, rosy-crimson margin, and a dark disk. Excellent form and habit.

Fair America, is a rich violet-purple and crimson, with a beautiful, clear white ring round a black disk. Good form and habit.

Emperor of France.—A first-class flower. Color, a bright, rosy crimson, with a clear, broad, white ring round a dark disk. A beautiful and very attractive flower.

Several other new kinds, just received from Europe, shall be reported on when sufficiently in flower.

A DESCRIPTIVE LIST OF A FEW OF THE BEST LANTANAS.—This is a most beautiful genus, eminently worthy the attention of all who desire first-rate summer bedding plants; as such they are unsurpassed, and the day is not far distant when they will become great favorites with every lover of bedding plants; and no flower garden will be considered complete without a bed or single specimens of some of the many beautiful varieties now in cultivation.

Lantana Doris.—A fine, bright yellow and orange; a very fine and beautiful variety.

L. Abbe Touvre.—Orange and carmine, fine habit, and one of the most attractive in cultivation.

L. Speciosa.—Color, deep orange and scarlet. One of the most beautiful in cultivation.

L. Fesonii.—Rosy crimson and orange. The beautiful contrast in the colors of this variety, makes it one of the most desirable.

L. Abbe Grandiflora.—Clear white, with bright yellow centre. One of the very best varieties in cultivation.

L. Bicolor Formosa.—Beautiful light yellow, shading off to rose. Fine habit.

L. Lutea Superba.—Bright yellow. Fine habit.

L. Picta Superba.—Large flower; a beautiful bright yellow, shading off to rose. A beautiful variety, of great excellence.

L. Rhodoneana.—A very attractive variety. Color, yellow, shading to rosy crimson. Habit, free and fine.

L. Souvenir d'Alexandra.—Color, a beautiful combination of yellow, rose, and carmine. A striking and very beautiful variety.

L. Americana, *L. Camera*, *L. Aurantiaca*, *L. Flavicomis*, and *L. Crocea Superba*, are older, but beautiful varieties, and well worthy a prominent place in every flower garden.

PINUS LAMBERTIANA. *

Gigantic Pine.

THIS fine tree is pronounced perfectly hardy, even after the two severest winters we have experienced. Mr. H. W. Sargent, of Wodenethe, on the North River, so pronounces it. As yet, we have few specimens in this section of country of much size to refer to, but large numbers have been planted, and it will interest all to have Mr. Nuttall's account of the tree, from the *North American Sylva*, and it is appended:—

"This majestic Pine (according to Mr. Douglas, its discoverer) covers large districts about one hundred miles from the borders of the Pacific, in latitude 43° north, and continues to the south as far as 40°. It attained its greatest magnitude in a sandy soil apparently incapable of supporting any vegetation. The trees did not form dense forests, but were scattered singly over the plains.

"This stately species attains a height of one hundred and fifty to two hundred feet, and varies in circumference from twenty to sixty feet. A specimen overturned by the winds was in length two hundred and fifteen feet; its circumference at three feet from the ground was fifty-seven feet nine inches, and at one hundred and thirty-four feet from the ground, seventeen feet five inches. The trunk presents an erect shaft devoid of branches, of from one hundred to one hundred and seventy feet elevation, covered with a very smooth light-brown bark. The pendulous branches form an open pyramidal head like that of a fir-tree. The leaves are between four and five inches long, and grow together, like the *strobilus*, in clusters of five, with similar short, deciduous sheaths; they are rigid, of a bright green color, but not shining, with the margin slightly scabrous to the touch. The cones hang pendulous from the ends of the branches, and are two years in acquiring their full growth; they are at first erect, and do not droop until the second year. When ripe, they are about eleven inches in circumference at the thickest part, and vary from twelve to sixteen inches in length! The scales are loosely imbricated, dilated, and round above, and perfectly destitute of armature. The seeds are eight lines long, and four broad, oval, and, like those of the Stone Pine, the kernels are sweet and pleasant to the taste; the wing is about twice the length of the seed, and the seed leaves are from twelve to thirteen. The whole tree produces an abundance of pure, amber-colored resin, which, when it exudes from the

* See Frontispiece, the cone reduced in size.

trees which are partly burnt, by some chemical change loses its flavor, and acquires a sweet taste, in which state it is used by the natives as sugar to flavor their food. The seeds (like those of the Cembra in Siberia) are eaten roasted, or pounded into coarse cakes for winter food. Timber, white, soft, and light. It is allied to *P. strobus*, from which, however, it is entirely distinct, but almost equally hardy in cultivation."

PURCHASING FRUIT AND ORNAMENTAL TREES.

How few understand, when selecting fruit or ornamental trees, that there are very material points to observe to secure trees that will thrive and do well. Every person who wishes to improve his grounds should become thoroughly acquainted with the value of his soil and all its leading features; wet or dry, deep or shallow, heavy or light; how the exposure, whether east, west, north, or south; clayey, rocky, sandy, or rich loam; and hilly or level. These are very important considerations, and without these being well understood, the highest degree of success cannot be attained. Want of attention to these matters has been the cause very frequently of great disappointment.

People order fruit and ornamental trees of nurserymen, and without ever giving any of these points a single thought, they plant them in places the very opposite of those they have been raised in, and the consequences are, very many die almost immediately, some linger a few months or years, and a few may manage to succeed partially. Now, cases of this kind are of very frequent occurrence; and when they do occur, they cause disappointment, and the nurseryman is unjustly blamed for people's own inattention to the above points. Almost every variety requires different soil, different exposure, and different treatment. Where the pear, plum, or cherry, will thrive admirably, the peach will grow indifferently, or not at all. And so with ornamental trees. Many tribes will thrive where others will not grow, and *vice versa*.

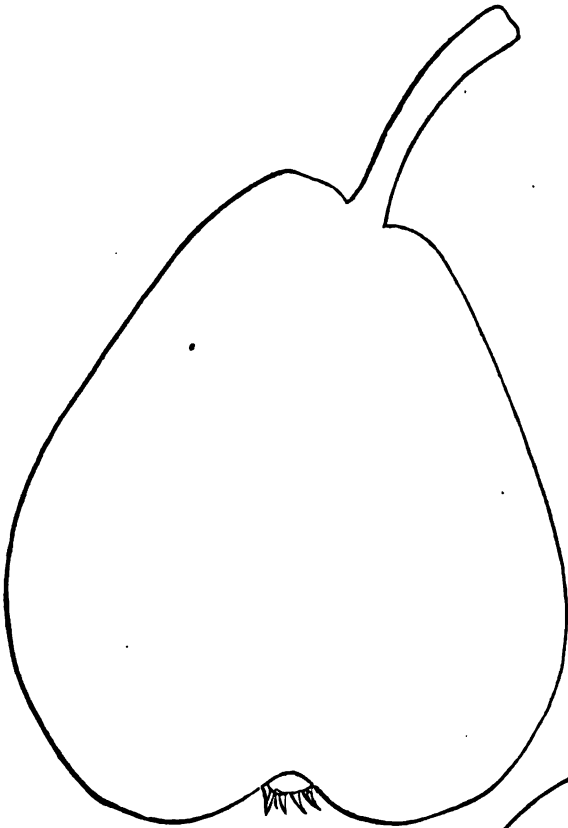
One important consideration in regard to the beauty of a garden, is the appropriateness of the trees planted. Too often we see a great want of judgment or taste in the selection of trees—large growing trees and plants in small places, and small trees or shrubs in large, extensive grounds. All this is evidence of a want of knowledge upon the subject, and can always be remedied by inquiry, so as to have trees conform to the size, exposure, soil, and situation, of the place where planted. In selecting trees, care must be had to select those that have clean, free-growing wood, well furnished with full, fibrous roots, good shaped heads, and well furnished branches.

Too much thought is too frequently given to the *cost* of a tree rather than to the condition of the tree itself; better to give a fair, reasonable sum to a reliable nurseryman for a *good* article than to get it for little or nothing from a huckster or puffer, who deals in *cheap* goods. Always buy of respectable men, pay full prices, get the *best*, and you will not regret it.

NEW PEARS.

BY CHARLES DOWNING, NEWBURG, N. Y.

THROUGH the kindness of John G. Bergen, of Brooklyn, N. Y., we are indebted for specimens and history of the following new pears, from which the inclosed outlines and descriptions have been made; and, if acceptable, please insert in the
Horticulturist.
CHAS. DOWNING.

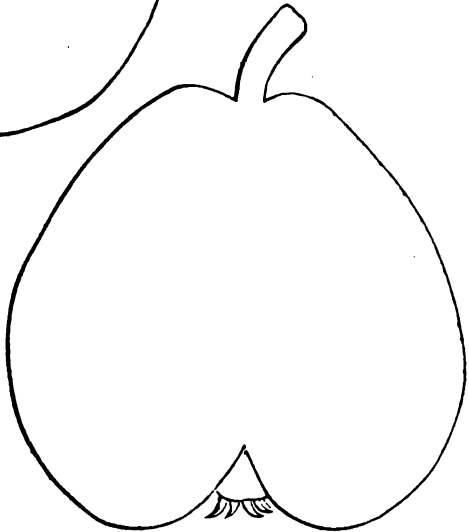


Bergen Pear.

sprinkled with brown and crimson dots. Stalk, long, rather stout, curved, inserted in a moderate depression by a fleshy ring. Calyx, small, open. Segments, stiff. Basin, small, surrounded by a wavy border. Flesh, whitish, veined with yellow, a little coarse and gritty, buttery, juicy, melting, with a sweet, aromatic flavor, delicately perfumed. Ripe last of September and first of October.

ISLAND.—The Island Pear originated with Cornelius Bergen, Flat Lands on Bergen Island (adjoining Long Island), some ten years since.

Tree, a strong, free grower. Young wood, yellowish-brown. An early bearer, and very productive.



Island Pear.

BERGEN.—The parent tree of the Bergen is a chance seedling, found in a hedge on lands now owned by John B. Ritching, at Bay Ridge, New Utrecht, L. I., formerly Simeon Bergen, and from appearance about thirty years old. Tree, moderately vigorous, upright; young wood, reddish. An early and good bearer, but not profuse. Mr. Bergen thinks it will prove a valuable market fruit, selling readily at the same price as Bartlett's.

Fruit, large, elongated, truncate-conic, inclining to pyriform, often with sides not symmetric, angular. Skin, waxen, lemon-yellow, finely shaded with crimson and fawn on the sunny side, and thickly

Fruit, medium size, short, pyriform, inclining to turbinate; often turbinate or Bergamot-shaped. Skin, pale yellow, netted, sprinkled, and patched with russet, and thickly covered with small brown dots, and slightly shaded with crimson where exposed to the sun. Stalk, very short, rather stout, inserted in a moderate depression by a ring or lip, surrounded by russet. Calyx, closed, or partially open. Segments, recurved, set in an abrupt, uneven basin, russeted. Flesh, white, a little granular, juicy, melting, with a sweet, sprightly, perfumed, somewhat aromatic flavor; "very good." Ripe, September to October.

GARDEN VEGETABLES NO. 14.—THE ONION.

BY WM. CHORLTON.

It appears somewhat singular that the improvement from an original state of many of our best kitchen esculents, has, or would seem to have had its beginning during the time which is generally known as the Dark Ages; and, in consequence, we are in the habit of saying that they have been in use from time immemorial. If we consider, however, that the teachers of theology, in those days, held almost despotic power; that they kept their knowledge amongst the privileged few; also, that the monastery was nearly the only school for gardening; and still further, that this individuality was well understood and much cultivated by these exclusives, the deficiency of many historical facts in horticulture is clearly seen. As we possess the result of their labors, which has, in many examples, been the forerunner of our present excellence, we may content ourselves with conjecture, and judge of physiological truth from our now more developed intelligence.

It is supposed that the onion was originally from Spain, but is just as likely that the knapsacks of the Crusaders were the receptacles of conveyance from the Asiatic continent. Whatever have been the means of introduction matters not in a practical point of view, as long as we have got so universally esteemed a vegetable.

The medical properties of the whole genus *Allium*, to which the onion belongs, are more or less stimulant and diuretic. In addition to these, the juice of our present subject is made into a syrup with sugar, and often administered to advantage in infantile croup and catarrh, when there is not much inflammatory action. It is also recommended in dropsy and calculous disorders; and when roasted, applied as a poultice to foul tumors. Notwithstanding these good qualities, there are many persons whose digestive organs are weakly, and which become deranged by the use of onions, when nausea and headache are the result. It is not advisable, in any case, to eat them either fried or in a raw state; for in the former, they pass the stomach comparatively by mechanical action, and in the latter, they often produce giddiness, and an affection similar to a "cold in the head;" while, properly boiled or roasted, they are nutritive and wholesome.

The onion thrives best in an open situation, having a free exposure to the sun, and a deep, rich, and mellow soil, that is not over sandy in its base, or wet in the subsoil. There is no danger of over manuring, provided the material is thoroughly rotted, or incorporated with the earth. Barnyard manure is the best fertilizer, but soot, guano, pondrette, urine, and soapuds are all useful auxiliaries, and which ought to be applied in the fall, previous to planting. There is also a singular exception in this vegetable; while most others do better by rotation, the onion will continue to produce equally good crops on the same spot for many years in succession, if the fertilizing material is judiciously renewed. Many cul-

tivators have testified to this fact, and my own experience verifies the same, as I have grown prize onions on the same bed for ten consecutive years; consequently, a little expense at first commencement will lead to after profit. To accomplish this, proceed as follows: Choose a plot of suitable size, and as near to the above-mentioned character as the limits of the place will admit of, prepare in the same way as recommended for rhubarb in the January No., page 17. This will make a good base to commence operations, when it is desirable to have the very finest prize quality, and an annual trenching and manuring will keep it up. Those who are satisfied with ordinary size and flavor will obtain such by simply ploughing, or trenching, and manuring, as for a crop of cabbages.

There are two methods by which a crop may be procured, viz: by sowing the seed the same season, or planting small bulbs of the previous year. The first is the best and least expensive, if rightly performed, excepting in those regions of country where the weather is extremely cool and wet, or subject to become dry and hot soon after the growing season commences.

Sowing the Seed.—Immediately when the ground is in working order after the breaking up of frost, fork over and loosen the soil well if previously prepared in the fall; and if not, trench and manure. Make all level with the fork or spade as the work proceeds; draw out drills with the corner of the hoe, one inch deep, and twelve inches apart. Sow the seed thinly, say one inch asunder; cover by treading in the sides with the feet. When the young plants are some three inches high, thin out to four inches apart, and at the same time take out all the weeds in the rows, when the scuffle hoe may be afterwards run between them, and all will be clean. And here I would take the opportunity of drawing attention to the desirableness and advantages to be gained by using this implement at all times while the weeds are small. In many places we see them allowed to grow until they entirely smother the young crops. When the mischief is done, and the expected produce has become considerably deteriorated, in fact, almost ruined, it is then thought to be about soon enough to eradicate them; the doing of which will occupy ten times more time than would have been required by an early application. Attention to this item will reduce the labor in a vegetable garden more than one-half, besides the advantage of an equal ratio of profit in crop. Nothing further is now required but an occasional clearing of weeds with the hoe, until the bulbs are ripe.

Planting Small Bulbs.—The object here is the obtaining of larger and better ripened bulbs, and is often resorted to in cool and wet climates where there is not enough solar influence to centralize the growth; and also in those countries where the commencement of summer is subject to regular droughts, and, consequently, the ripening is premature. In both cases the method is to be recommended, as the plant is partly developed to begin with, and only requires to finish out that extension, which, under more favorable circumstances, would be accomplished in one season. In most of our Northern States we have growing weather sufficient for healthy maturity, which renders this process unnecessary if the seed be sown early enough. To procure these small bulbs the seed should be sowed thickly on poor soil about the last week in April, and the plants allowed to remain somewhat crowded, by which minute size and early maturity is gained. When ripe, pull the whole up, lay them on the ground exposed to the sun for a few days, and afterwards remove to a dry but cool room till planting time. This will be in the following spring, as soon as the soil is in good state for working. Prepare the same as for seed; draw drills not more than an inch deep, and one foot apart; place the bulbs therein, and level the soil as the work proceeds. Do not cover more than is sufficient to retain the set in its place, for nothing dete-

riorates the form, size, and particularly the keeping qualities, more than covering up during growth.

There are many varieties of the class that is suited for general kitchen and market purposes, but nothing is to be gained by an extended list. The following, therefore, will be found to be the best, and give satisfaction:—

Strasburg.—Tawny, red, tinged with green; hardy; a good keeper, with strong flavor.

Globe.—Pale brown, globular, large; keeps well; mild flavor.

Deptford.—Pale brown, somewhat globular, solid; a good keeper; rather strong flavor.

Blood Red.—Middle size, flat, dark red; the best keeper; strong flavor.

White Portugal.—Medium size, white, rather flat; an early sort, with mild flavor; does not keep very long.

Silver Skin.—Pearly, whitish-green, below medium size; should be sowed thick, as it is best adapted for pickling.

Large Globe Tripoli.—The largest onion grown; globe-shaped, inclining to oval, light-reddish green; does not keep well; flavor very mild. This is the best variety for roasting; and, when properly cooked, makes a most savory dish. In such state, it is entirely free from the smell or taste which belongs to the other kinds, and may be eaten in reasonable quantity with impunity, by those who may have the most delicate digestion. In Portugal this sort is grown very extensively, and often, with a piece of wheaten bread, furnishes the breakfast of many of the rural peasantry. The Tripoli onion requires some little difference in the practical treatment, from what is hitherto mentioned. If possible, obtain the seeds imported from southern Europe, as they invariably produce the finest bulbs. Sow about the middle of September, and in those latitudes which are subject to severe frost, protect the young plants with glass frames during winter, in the same way as for cauliflower plants. When the severe weather is past, lift carefully, and plant singly six inches asunder, in rows twelve inches apart. Be careful to make the holes deep enough to admit the roots down perpendicularly, and do not bury the collar below the soil, but place it even with the surface. If the weather prove dry at the time of planting, or even afterwards up to the middle of summer, copious watering will make success more certain, and add very much to size and mildness of flavor. Generally speaking, with the ordinary modes of cultivation, this sort produces only "thick necks;" that is, a preponderance of stalk and leaves, without a corresponding ripening of bulb. If, however, the advice here laid down be followed, there need be no cause for complaint on this account. During wet and cool seasons, this deficiency of ripening is occasionally prevalent in all the kinds; the which may be remedied by bending over the tops a week or two previous to usual maturity, so as to partially break the lower base, by which the developing action is arrested, and the bulbs assisted in their lateral swelling.

When the tops of any or all of the kinds begin to ripen off, the bulbs should be immediately loosened from the soil; leave them exposed for a few days to dry, and afterwards tie them in "ropes," or spread on the floor of a dry and cool room. As they will bear almost any amount of frost without injury, there need be no care taken on this account.

Potato Onion.—This variety is distinct in habit from the other kinds. It differs in the producing of a number of offsets, or side bulbs, each of which, with good culture, is like to the one planted. The distance apart may be nine inches by fifteen inches, and the bulbs require to be planted deeper in the ground. The crop is also improved by covering up with the hoe some three inches during growth, from which peculiarity it is sometimes called the Underground Onion.

Welsh and *Tree Onions* are also distinct, but are only of use in very cold countries, and, consequently, not worthy of more than a passing notice.

To save seed, choose the handsomest bulbs that are true to character, plant one foot apart, and four inches deep, early in spring. When the flower heads are fully developed, tie up to small stakes, or fix a few low branches amongst the plants, which will prevent the wind or rain storms from breaking them. When the seeds begin to turn black, cut off the heads, lay them in a dry room for a time, when they may be rubbed out, and packed away in paper bags.

THE ROSE, AND ITS CULTURE.

BY JAMES S. NEGLEY, HORTICULTURIST, PITTSBURG, PA.

"While spring with lavish flow'rets glows,
From the gay wreath I pluck the rose."

THE exquisite beauty and delicious fragrance of the Rose has earned for it the title of "Queen of Flowers," and encouraged its culture since time immemorial. The old Emperors of Rome soothed their slumbers by its odors, and strewed its leaves beneath the feet of their honored guests. Anacreon and Virgil wove its charms into their love ballads, and dedicated its origin to the gods. It was an ancient custom to bind a chaplet of its chaste buds on the fair brow of the bride at the altar, as an emblem of her innocence and devotion. Neither were its flowers forgotten in affection's offering at the slumbering place of the cherished dead. Who is there of the readers of the *Horticulturist* who does not mingle the Rose amongst the associations of youthful days. By common consent, no home or pleasure ground is complete without it. It is not even excluded from the natural flora of any of the earth's divisions. I have often stopped to admire its wild simplicity amidst the gorgeous splendor of the tropics, and brought home its yellow-eyed blossoms as souvenirs of the far West.

Within the last few years, the florist's skill has been well rewarded by many remarkable varieties. The flowers are more double and perfect; the shades of crimson deeper and more vivid; white is blended with orange, and the habit of the plant much more elegant. To choose the best from the long lists offered, is no easy task, without attempting to disparage the old favorites. I shall only give a list of the best *new* sorts, and refer briefly to their proper culture.

HYBRID PERPETUALS.—This class is the most desirable and magnificent of Roses—perfectly hardy, flowering freely from June to the end of October. Plant in strong clay loam, enriched with well-rotted manure; prune last year's wood back one-half; thin out weak shoots, and remove the flowers when they fade.

Adelaide Fontaine—deep pink; large and beautiful.

Alexandrine Beechmeteff—bright rose; very full.

Agustie Mie—light rosy pink; very fine.

Arthur de Sansals—dark velvet crimson; superb.

Bacchus—crimson scarlet; fine.

Baronne Heeckeren—bright pink; very large and beautiful.

Colonel de Rougemont—deep rose color; splendid.

Chipetowzikof—deep crimson.

Comte de Nantieu—deep rose; fine shape.

Duchess of Norfolk—vivid crimson; profuse bloomer.

Duchess de Cambaceres—bright rose; flowers late.

General Brea—fine, deep crimson.

General Bedeau—bright red ; compact and double.

" *Castellane*—bright carmine ; superb.

" *Jacquiminot*—brilliant crimson scarlet ; a first-rate new rose.

" *Simpson*—bright carmine ; full and large.

" *Pellisier*—pale rose ; fine.

Graziella—brilliant pink ; exquisite form.

Imperatrice des Français—pale flesh ; very double and fine.

Jules Margottin—bright deep rose ; highly perfumed, and one of the best roses in cultivation.

Lord Raglan—deep velvet crimson ; splendid.

Louis Peyronny—bright pink ; very fine.

Madame Domge—deep, rosy pink ; superb.

" *Guinnoisseau*—deep lilac rose ; very double.

" *Knorr*—pink, with rosy centre ; fine.

" *Masson*—shaded crimson ; large and double.

" *Vidot*—light pink ; beautifully cupped.

" *Theodore Martell*—deep flesh ; fine shaped.

Mathurine Regnier—pale rose ; remarkably fine.

Mère de St. Louis—delicate flesh ; showy.

Næmi—rosy pink ; fine.

Prince Leon—vivid crimson ; a superb new rose.

Paul Dupuy—velvet crimson ; very fine.

Souvenir de la Reine d'Angleterre—large, bright rose ; splendid.

" *de Levison Gower*—deep crimson ; large and fine.

Triumphs de l'Exposition—beautiful, deep carmine. (To be continued.)

FRUIT AT THE SOUTH.

BY J. VAN BUREN, CLARKSVILLE, GA.

It is but a few years since our people became disabused of the idea that the pear, apple, and some other fruits, could not be successfully raised in the more southern States ; yet, notwithstanding this once prevalent opinion, few of the Northern States can boast of a better or larger variety than Georgia. We now have over one hundred varieties of choice, and some of them superb, Southern seedling apples, whose character has become established and well known. Many of these were originated by the Cherokee and Creek Indians, who, it appears, were entirely ignorant of the process of propagating by grafting, but depended upon the sowing of seeds, which were collected in their intercourse with the whites. When the Indians left the country, their lands were occupied by our citizens, and since the enthusiasm for cultivating fruit has become awakened within the past ten years, these desirable varieties have been made public.

Amongst our best winter apples are the Equinately, Tillaquah, or Big Fruit, Chestoa, or Rabbit's Head, Elarkee, and Cullawhee, all of Indian origin—the latter the largest apple known. Then we have Nickajack, Camak's Winter Sweet, Hoover, and Yahoola, with a host of quite modern date. Equinately, Tillaquah, Nickajack, and Camak's Sweet, stand unrivalled in size, beauty, flavor, and keeping qualities. Being familiar with the best Northern varieties, such as Esopus, Spitzenberg, Newtown Pippin, Baldwin's Vandervere, and others, we do not hesitate in placing the before-mentioned Southern varieties superior to them in all respects. Amongst our summer and autumn varieties, the Julien, Batchellar, and Dichasoon, stand pre-eminent.

Pears, so far as tested, maintain as high a character for excellence here as in any of the Northern States or Europe. We have a number of Southern seedling varieties with excellent characters, but not having fruited them myself, will forbear giving an opinion until I have done so.

The peach is almost indigenous to our country, springing up by thousands in fence corners and hedgerows, and having no diseases here except the attacks of the borer, who, however, does but little injury, as the trees generally grow so vigorously that he cannot kill them; for while he is eating on one side, the tree is gaining on him on the other.

The "yellows" is unknown in the Southern States. I have been a resident of Georgia some eighteen years, and never saw a single case of it, and presume it does not exist here at all.

Your Northern peaches will not compare favorably with the same kinds grown here; besides, we have many excellent native varieties unknown at the North and West. Our negroes, I think, would hardly eat your peaches, for they eat none poorer than Early Crawford's or Late Admirables. I have little doubt it would be to the interest of your large cultivators of this fruit to procure their trees from the South, as they would prove to be more durable and healthy than those raised at the North.

So far as we have learned from our correspondents, there appears to be a peculiarity attaching to our Southern apple-trees which we were not prepared to expect, which is, that they withstand the severe cold of the North better than the Northern varieties. This fact has been communicated to us from the northern portions of Indiana and Kentucky: that while the Southern varieties escaped injury by freezing, Northern trees were cut down by it. Should this property prove uniform under further experience, it will be a somewhat difficult phenomenon to account for.

With all our advantages of climate and soil to the successful cultivation of all the fruits, we have a serious drawback, which is the universal prevalence of insects which prey upon them. We have ten where you have one. Curculio, corpocapsi, and other fruit eaters, swarm here, and from whose ravages it is difficult to rid ourselves; not these alone, but, in years when peaches are abundant, the honey-bees take to eating them by thousands, on the juice of which they get drunk, and, like human rowdies, do no work as long as their spree lasts, which is as long as they can find peaches to eat. Whether this is caused by the prussic acid they contain, or by alcohol, I do not know; probably, however, by the latter, for so soon as they have eaten a hole in a peach, fermentation commences. The consequence is, that when we have an abundant peach crop, we get but little honey, for drunken bees are like drunken men; they stagger about, make a great fuss, and do nothing.

Peaches and pears now in full bloom, with the prospect of a good fruit crop, although we may have subsequent frosts, and disappoint our hopes.

JAMES MATHEWS' CURCULIO REMEDY.

A COMMUNICATION from Mr. James Mathews (now of Knoxville, Iowa), relating to his remedy for the Curculio, is too lengthy for our limited pages, and as it still does not reveal entirely what the secret is, we must be excused for giving only the substance of what he now relates. Reasons of his own induce him still to decline to make his "discovery" public. The committees to whom it was confided were

unable to agree, and never formally reported. A new field of cultivation in Iowa will afford him opportunity for further experiments.

A Mr. Hobbs assures him he has been successful, and is willing so to state it to inquirers; residence, Randolph, Crawford County, Penn. He thinks improvements may be made.

Mr. M. has studied the "Turk's" habits, and he is satisfied that "*the Curculio does not migrate during its depredating season.*" It fixes its abode under the tree; it rises from thence by the aid of its wings (which cannot be seen by the naked eye except when they are protruded for this purpose) perpendicularly to the branches holding the fruit. When the eggs are deposited, it descends again to its lodgment or burrow, and so on from day to day. That it cannot fly horizontally, I do not maintain; I only allege that, during its laying season, it remains stationary, except as previously stated. It does not eat the fruit, the deposit of the eggs being its object;" and all theories, he thinks, point to this fact.

A pavement as extensive as the limbs is a remedy, as it leaves no burrow. This does not prevent the insect from flying from a contiguous tree, and depredating, if such were its habits. Let a pig-pen be built around as large as the pavement would be, and a single hog will save the crop; not because the hog could prevent the insect from flying from an adjacent tree to the one inclosed, but because his habitation would be destroyed by the rooting. Again: on a given tree overhanging a pond or stream, the result is the same.

In the *Horticulturist* for November, 1856, Mr. Gardener, of Virginia, gave a remedy which, Mr. M. thinks, assists his theory. It was to remove the soil from around the tree as soon as the insect is noticed or begins to work; taking the earth five inches deep, it was wheeled away and scattered about, thus destroying (says Mr. G.) the enemy. But Mr. Mathews thinks he gives an erroneous reason for a veritable remedy, and protests against the conclusion; for a wheelbarrow load of young tortoises, whose shells had become perfectly hardened by age, could be as easily destroyed in the same way. The enemy was only removed from their rendezvous, and their habitation destroyed, the quarters from whence alone their work is carried on; *they* were not destroyed, and if they could fly, they would have returned. A plank floor, cement floor, and shaking into sheets for small trees—all these answer to a limited extent, but these are too troublesome and expensive, and a hog is offensive; but Mr. Gardner's is, according to our correspondent, the best plan, and will succeed. Apply it to alternate trees, and the great question will be in a better stage for decision, and the insect, if it does not fly from tree to tree, may be destroyed in many ways.

Here Mr. Mathews leaves us still in the dark as to what he really proposes. He wishes, however, to suggest to those who have been informed of his plan, that where the depredators are very numerous, it has been found necessary to make the application (whatever it may be!) a second time.

We abridge Mr. M.'s remarks to keep the subject alive, and add our regret that the public are not yet made acquainted with "*the remedy.*" Let us hope; and, meantime, let experimenters follow this hint (all we can get), and remove the earth five inches deep.

A new light, however, may be thrown upon this subject by the researches of Dr. Fitch, published in the recent volume of the *Transactions* of the New York Agricultural Society. He says: "Although this insect and its destructive habits have been so long known, we to this day remain in ignorance of its abode and condition during half the year. Most persons have supposed that some of the worms were so late in leaving the fruit that they remained in the ground during the winter, and from these come the beetles which appear in the spring; and

several of the remedies have been based upon this theory. But that a whole generation should be brought forth abortively each summer, to perish without making provision for a continuance of their species, and that their perpetuity should be left to such a mere accident as a few individuals casually belated in coming to maturity, would be an anomaly wholly unlike anything which we meet with elsewhere."

Dr. Sanborn has asserted that at no season do they remain longer than six weeks in the ground, and that neither they nor the perfect insects lie under the ground during the winter. Dr. Harris thence inferred that those beetles which come out the latter part of summer lurk in some place not yet discovered during winter, to come abroad again in the spring, and deposit their eggs in the fruit. Dr. Fitch thinks their lurking-place is ascertained. On a small branch of a pear-tree were found, in 1856, about thirty short, curved, or crescent-shaped incisions in the bark, similar to those made by the curculio upon fruit. On raising the bark, several little worms (commonly six in number) were found torpid, and lying in a row, side by side, with their tails toward the crescent, and their mouths in contact with the soft, green pulp of the middle layer of the bark, ready to eat their way onwards as soon as the warmth of spring awakened them again to activity. They had evidently come from eggs which had been dropped into the curved incision, were without feet, transparent, and pale yellowish, resembling little specks of gum or turpentine. It would seem that those insects hatched the latter part of the season, finding no fruit in which they can deposit their eggs, are obliged to resort to the smooth, tender bark of the branches of fruit-trees, and the worms in these eggs repose in, not under, the bark through the winter, and produce the spring beetles which annoy the cultivator so sadly.

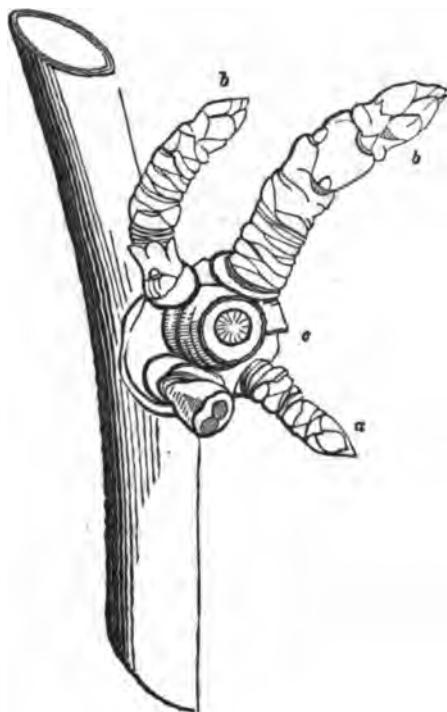
If this opinion (says the doctor) as to the winter quarters of the curculio proves to be correct, it may lead to most important results, as he thinks that, allowing for all casualties, it is probable that a hundred beetles might have been matured from the short piece of limb examined, and which was only four and a half inches long, and less than half an inch thick. The worms were only covered by the epidermis and thin outermost layer of the bark; so that soft soap, or some other alkaline substance, applied externally there is little doubt would penetrate through this covering, and destroy the tender brood.

If the winter retreat of this enemy can be thus discovered on trees whose fruit has been destroyed, by the mark he places upon the bark, an effectual remedy may be applied with greater ease. Dr. Harris propounded this theory in his first edition, but abandoned it. Dr. Fitch now resuscitates it, and we give it in the hope that it may be verified by careful observers the coming plum season.

THE PRACTICE OF PRUNING.

THE practice of pruning receives the increased attention of Dr. Lindley in his new edition of the *Theory of Horticulture*; some of this, as it illustrates principles, we shall copy. Though, in this country, we are not given to training the pear against walls, the author thinks the horizontal mode answers well for this fruit. "When the young tree is planted, head down the shoot to a foot or four courses of bricks above the level of the ground. Train a shoot upright, and one right, another left, at an angle of 45°; if these prove unequal, in point of vigor, depress the strong, and elevate the weak. Lower them both, about the middle of September, to the horizontal line represented by the joint between the fourth and fifth course of bricks. Their origin on the stem was somewhat below this line,

and therefore they must ascend a little to reach it. This, as regards the lower branches, is an advantage; for the sap flows more freely into limbs thus diverging than it does when constrained to proceed from the stem directly at right angles. The lower branches being apt to become the weakest, may be afforded this advantage, whilst, towards the top of the wall, the branches may be made to proceed horizontally immediately from the stem.



Spur of the Pear-Tree.

"The tree having now a central upright shoot, and two horizontal side shoots, shorten the latter at the winter pruning according to their strength; if weak, nearly to their bases; the upright one to the fourth course of bricks above that to which the first shoot was cut. Train the shoot from the uppermost bud, in a perpendicular direction, and one on each side as before. Proceed thus to obtain an upright and two horizontal branches, every year, till the tree reach the top of the wall. When the horizontal branches are sufficiently strong, they may be trained along the courses of bricks without shortening.

"If properly managed in summer, fruit spurs will begin to form along these branches. The accompanying cut represents a spur in which *a* is progressing to form a blossom-bud, whilst *b b* are already blossom-buds, known by their plumpness; and from this period of the season such buds exhibit signs of active vegetation; but in *a* the surrounding scales remain undisturbed till late in spring. The scar at *c* is where a portion of spur

that has borne fruit has been cut back; and, at the winter pruning, after *b b*, have produced fruit, they must likewise be cut back to others likely to form at their bases as they did at the base of *c*."

The pruning of the pear-tree trained against an *espalier* differs in nothing from that which it requires when trained against a wall, except that the spurs of *espalier* trees need not be so much shortened.

Next month we shall give Dr. Lindley's mode of pruning the peach.

ANOTHER WORD FOR EVERGREENS.

BY H. W. SARGENT, WODENETHE, FISHKILL LANDING, NEW YORK.

I CANNOT allow the excellent article of the Rev. Mr. Gridley, in the April number of the *Horticulturist* (entitled "A Word for Evergreens") to go down to posterity without adding another word on this subject.

Mr. Gridley lets us off with *only* nine or ten varieties; and although he is will-

ing to allow that "by dint of draining and blanketing" a few shivering adopted citizens may be carried through several winters, yet the conclusion one comes to from his article is, that we had better let these foreigners alone, and fall back upon the few varieties he enumerates. I am willing to grant that many varieties which, a few years ago, we were in hopes to domesticate here, have disappointed us, and can only be grown in certain situations, and, even then, with but indifferent success.

The Deodar Cedar, Cedar of Lebanon, *Cryptomeria Japonica*, *Araucaria Cunninghamia*, and a few others, can only be grown in the shade of an Evergreen wood; they certainly do not thrive in an open, exposed lawn. But Mr. Gridley must not cut us off from a great many varieties which I pronounce unqualifiedly perfectly hardy in this latitude, viz:—

Pinus ponderosa.—I have had this out, unprotected, eight years; it passed through those trying winters, 1855–6, when the common road-side Cedars were destroyed, and White Pines and Hemlocks badly injured; and yet this was untouched.

Pinus Cembra, *P. Laricio*, *P. Monticola*, *P. Pyrenaica*, *P. Pumilo*, *P. Lambertiana*, *P. Excelsa*.—What can be more hardy than these Pines? I have never seen them injured by cold, though the excelsa is sometimes disabled from excessive growth.

Picea Frazerii, *P. Nobilis*, *P. Nordmaniana*, *P. Pichta*. *—These four are every bit as hardy as anything Mr. Gridley mentions, and certainly nothing can be finer than any of them. *P. nobilis* is, in England, all that Mr. Buist says of it in his article, last spring, on Elvaston Castle. We only want time to make it as fine here.

P. Nordmaniana is a superb tree; in my judgment, by far the finest of the Silver Firs, so far.

Abies Clanbrasiliana, *A. Elegans*, *A. Pumila*, *A. Compacta*, *A. Pygmaea*, *A. Hudsonii*, *A. Orientalis*, *A. Cephalonica*, *A. Pinsapo*.—These nine, with me, never suffer, and I am sure the years 1855–6 were tests of their endurance as well as mine; for I lost many things which had done perfectly well for many previous years.

Cephalotaxus Fortunei, *Taxus Japonica*, *Torreya Taxifolia*, a dozen of the Junipers, nearly as many *Arbor-Vitæ*s, it strikes me, are, beyond doubt, hardy. I never "drain or blanket" these, and yet they pass unscathed through our hardest winters. The *Torreya* gets its last buds a little whitened, but not more than the Red Cedar often does.

I don't know anything prettier or *hardier* than *Thujeopsis Borealis*—a variety of *Thuja* from Baffin's Bay—or the variegated *Thuja* or *Thuja filiformis* (the Weeping *Thuja*); and yet all these are perfectly hardy.

Mr. Gridley says Providence wisely limits the growth of the *Rhododendron*, *Holly*, and *Laurel*, of England, to countries where little snow falls. But let me ask him, where do (or where did, rather) the English get these plants? One *Laurel* from Portugal, the other (*Laurus nobilis*) from Italy, and the *Rhododendron* from America! I have had large masses of *Rhododendrons* many years, and they have never yet suffered from snow, though I have seen my beds covered two feet deep; it is the sun, not the snow, which is the enemy of the broad-leaf Evergreens.

And finally, do NOT "feed your plants" (your Evergreen plants) "well." On the contrary, if you have any doubt of the hardihood of a plant, starve it; let it

* Mr. Gridley is in error in calling this the Cracovian Juniper. It is the Siberian Silver Fir.

make little growth, but well ripened wood, and it will withstand many more degrees of frost than the same tree with a luxuriant growth; beside which, the tree will be handsomer and better furnished. The fault of *Pinus ponderosa* is a too luxuriant growth of three or four feet; consequently, the tiers of branches, being separated to this extent, have a naked, illy-furnished look; while an upright growth of twelve to twenty inches, produces a thicker and more condensed tree, with less daylight and nakedness through it.

The reason why the *Cryptomeria* and *Deodar Cedar* are not more hardy, is because of their luxuriant and late growth, growing quite late into the autumn—their wood being consequently immature, and not ripened; when frost comes, they suffer as a natural result. Plant these trees in poor, thin soil, and they will stand much better; give them the additional advantage of a wood over them, and (with me) they stand perfectly. I have a *Cryptomeria* six or seven years planted which never even browns; but it is in a poor, slate soil, and has never been stimulated, and never grows over three or four inches in the season; consequently, the wood being well ripened, the tree is in a condition to resist a very low temperature.

In conclusion, I would add that the trees I enumerate above are, with me, as hardy as the *Norway Spruce*. There are many more I would advise the amateur to plant, that, in proper situations, do admirably well; but I do not wish to alarm Mr. Gridley too much with too many varieties. I think the tendency of his article would be, to make planters begin where their fathers stopped many years ago. I may err the other way, but I honestly believe that everything I have mentioned may be safely planted as far north as my latitude.

EUGENIA LUMA

Is the name of a most superb plant figured in the last number of Curtis's *Botanical Magazine*, conducted by Sir William Hooker, who says of it: "A charming shrub, from the open border of the nursery of Veitch & Sons, who introduced the species from Chili. It is quite equal in beauty to our common *Myrtle*, and no more need be said to recommend it as an ornamental evergreen shrub for our gardens. It blossoms in the summer months, when the branches are literally loaded with the white blossoms, almost concealing the copious foliage; the leaves, indeed, are not much unlike those of the common *Myrtle*, but broader, and suddenly and sharply apiculated. It inhabits the colder parts of Chili, from Conception to the island of Chiloe, and Valdivia, and hence its hardiness may be accounted for. It is called the 'Arroyan' by the natives."

DIOSCOREA BATATAS.—If you could conveniently call on us, we shall feel pleasure in showing you a tuber that at the present time weighs five pounds, and measures two feet four, and one-half inches in length; its growth in that direction was to some degree checked by its reaching a bed of gravel. We must observe, however, that this one has been three years in attaining the size just mentioned, but we have others of one year's growth, four of which, out of the few we have left, weigh twenty-four ounces. With regard to its quality as a table vegetable, we think that if it was mashed, after being properly cooked it would be difficult to tell the difference between it and the potato, except by the color which, in the *Dioscorea*, is whiter. We intend growing a few during the forthcoming season, and have made a memorandum to send you the result of our experience.—A GARDENER in *London Chronicle*.

EDITORS TABLE.

CARD.—The Proprietor of the *Horticulturist* resigns, with this number, his connection with the work, passing it to C. M. Saxton, of New York (the well known publisher), who will bring to the work the advantages of twenty-six years' experience in publishing. He will be able to devote to it an amount of time and personal attention that the undersigned found impossible, in consequence of engagements in a different line.

The *Horticulturist* will be hereafter issued in New York, under the best auspices for the subscribers. The same Editor will continue to give it undivided attention. I ask for my successor in the publication a continuance of that patronage and confidence which have been so kindly and uniformly extended to the work.

ROBERT PEARSALL SMITH.

PUBLISHER'S CARD.

A LONG connection with the public as a publisher, and especially of agricultural and horticultural works as well as an innate and fostered love of these topics, has induced me to become the proprietor and publisher of the *Horticulturist*—a work which has long maintained a prominent place in the affections of a large circle of patrons distributed throughout the Union, and extended beyond its boundaries. It is my confident belief, that by devoting almost exclusive attention to the interests of this publication, its influence for good may be greatly extended, and I enter upon this career with confident hopes of success.

The interest in horticulture having greatly increased during the publication of this periodical under the successive editorial management of A. J. Downing, B. Munn, P. Barry, and its present Editor, J. Jay Smith (who has carried the work through three prosperous years of its history, and will retain his connection with it), we hope that this popular journal will now enter upon an enlarged sphere of usefulness.

Subscriptions and all other business communications should be addressed to

C. M. SAXTON, *Publisher*,
25 Park Row, New York.

N. B.—All outstanding debts to be settled with the former proprietor.

TO CONTRIBUTORS AND EXCHANGES, ETC. ETC.

Communications, letters, catalogues, periodicals, &c. &c., intended for the perusal of the Editor, should be uniformly directed to the *HORTICULTURIST*, Germantown (Philadelphia), Pa.

AGRICULTURAL EDITORS.—It is proposed that a convention of Agricultural Editors shall be held some time in June next, and New York is suggested as a suitable point of meeting. Good may very probably result from such meeting.

SPRING.—If our readers enjoy spring as we do, they will now be looking out for its approach, though early May, in this latitude, is scarcely the month the English poets have described. We do have fine glimpses of progress, however, and must be content with what we get for a week or two.

"And see where surly Winter passes off
Far to the north, and calls her ruffian blasts;
His blasts obey, and quit the howling hill,
The shattered forest, and the ravag'd vale;
While softer gales succeed, at whose kind touch
Dissolving snows in livid torrents fast,
The mountains lift their green heads to the sky.
As yet the trembling year is unconfirmed,
And Winter oft at eve resumes the breeze,
Chills the pale morn, and bids his driving sheets
Deform the day delightful."

But the insects that people the sun's beams, the honey bees extracting liquid sweets from opening buds, the butterfly expanding its wings to the idle air, the thistle's silver down wafted over summer seas, airy voyagers on life's stream—all, all, are soon to awake to life, inhaling the fragrance of a thousand flowers, and drinking pleasures under halcyon skies.

"Around us the bees in play flutter and eluster,
And gaudy butterflies will frolic around."

PEAR CULTURE.—The question of profit in the cultivation of any article, whether it be grain or fruit, is the one to which interest mostly attaches. In the present number, our friend, Lewis F. Allen, in his peculiarly forcible way, and with an array of strong arguments, attempts the solution of the pear problem in a mode which will be received by some as truth, by others with grains of allowance. If pear culture on a large scale, as a dependable crop for the support of a family, is not to be recommended, this fruit is too popular and too excellent to be allowed to be neglected; it is a very good and sometimes very profitable addition to market farming. A few trees, in situations where they are in the way of nothing else, will often give clever returns in money. They ought to be of good looking kinds, and the fruit should be exhibited in its best state to the purchaser at the moment almost that it is fit for consumption. In gardens of even small extent room can be found for a few pear-trees, which may be so planted as to cast little or no shade on vegetable beds, or in corners where they can receive proper attention. No garden is complete without them; no family in the country or a village should be contented unless they can have a share of this fine fruit, just as everybody has a grape-vine. In situations where the raiser can retail his product, we can believe in any amount of profit which has been received by successful cultivators around Boston, in which latitude Mr. Allen admits with perfect candor that large profits, the result of great success, have been realized.

We think that one or two elements in this controverted matter have been too little taken into the account, and may be referred to as points that are yet to be more fully understood. In the *Report of the Massachusetts Horticultural Society*, which we abridged in February, page 89, it is stated that a grower has ready sale for those pears having a russety skin, while those of green skin could not be disposed of; to this end he has to prepare them for the customer's eye by a sweating process there described; "while Mr. Gordon's Bartlett's were yielding him ten dollars a bushel, other wagons, by the side of his, had pears of

the same variety, equally as large, but, in consequence of retaining a green skin, were offered at *three dollars* a bushel." Here is testimony that is sufficient to account for all the differences of opinion as to profit. If one man can get ten dollars a bushel, and his neighbor only three, while the difference of the cost is so small as in this sweating process, the whole question of profit turns upon one circumstance. Testimony delivered before a jury, as it would be given by one vender, would create a verdict of *profitable*, while the whole would be overset by the sworn to words of the next neighbor with the very same fruit, and the jury might say *unprofitable*. Our readers must take these things into consideration; pear culture is advancing; better kinds, better understood trimming, keeping, and now by sweating, will give to many new cause for perseverance, notwithstanding the discouragements of others, whose opinions, recorded in our columns, it is equally the duty of an impartial journal to promulgate, with the results obtained by others more favorably situated. Colonel Wilder assures us that in his neighborhood nine hundred dollars have been received from the produce of an acre and a quarter of pears. This extraordinary result it should be the duty, the pleasure, and the amusement of others to emulate. The secret, if there were any, is as well known, thanks to our pomologists, as the best mode of cultivating any other fruit; trees in millions have been set out in every direction, but we hear of no similar profits except near Boston. Have the Bostonians been educated to love pears better than any other citizens, so that they will give higher prices than are to be had in other places? Is it the sweating? It would appear that this is the matter, for the difference in *Boston* between a bushel of sweated pears and a bushel of green skinned fellows, is so great as to be quite amazing. We can see, in imagination, the torture of the owner of the green-skinned Bartlett's as he counted his three dollars against his neighbor's ten, the name of the latter Mr. John Gordon, of Brighton; that of the owner of the unsweated article not given.

Time enough has elapsed, trees enough have been planted, exhibitions enough have been made, and our *parish* is yet as a whole unpeared. The amateur and small gardener can generally enjoy this fruit in moderation, but for profitable culture, in our own neighborhood at least, we have yet to see it. In Dr. Warder's book he asserts that the Osage orange does not sucker; here it does; in Ohio it does not exhaust the neighboring land; here it does; perhaps in Ohio the soil is so deep that the roots go downwards, while here they seek pasture near the surface. Such differences may and do exist; let us therefore cultivate in each climate what that climate is adapted to, and above all, let Boston send this way some of her fine pears, for Philadelphians, as a people, have yet to know how a good pear tastes. They will be contented with the three dollar Bartlett's, as ten dollars is high, and the freight is to be added.

In allowing both sides of this interesting question to be discussed in our pages, we can have no object but the elucidation of the truth. Whatever may be found regarding the *profitable* culture of the pear, one fact is very conspicuously obvious, and that is, the amateur and the gardener and farmer are materially benefited by the knowledge of and the introduction of the best kinds, and how to cultivate them. The mania which has raged on the subject has thus had its advantages, and it will not be laid till we know all about it and the climates which are to supply the more unproductive districts.

We shall insert next month an essay on Dwarf Pear Culture from an English point of view, by our correspondent T. Rivers, of Sawbridgeworth, Herts, highly eulogising the quince stock for garden culture.

LUCK.—There are believers, even among gardeners, in luck. "Oh!" says one, "he had a good chance;" another declares his successful friend was "a lucky fellow." The "luck" which has made the fortune of the best gardeners is no luck at all. It is knowledge ac-

quired by hard study and hard labor; by reading, and avoiding the dram bottle; by keeping a steady eye on the results of experiments aided by the knowledge of written materials. What "luck" can a gardener have who prefers idleness to botany; what hope can he ever entertain of rising to independence, if he cannot distinguish one species of plants from another? He must always be at fault, unless he knows something more than routine cultivation, and can adapt his tactics to new circumstances, or give himself a reason for his acts. "Luck" is a term to be expunged from every vocabulary except that of the gaming-table or the turf. In the language of Dr. Lindley: "Our personal experience in this matter now extends over the best part of half a century, during which time circumstances have brought within our knowledge the private history of most of the successes and failures which in that period have deserved notice among gardeners, and we feel entirely justified in saying that those who have risen have had to thank their own superior knowledge, the fruit of superior industry; while those who have fallen can only blame themselves for that want of knowledge and determination to succeed, which, in this world, are indispensable in all classes where mental power is necessary, and from which political influence is withheld."

Were any proof of the justice of this opinion needed, it would be found in the skill of those eminent men in the horticultural world who, by diligent study, have privately, and in spite of difficulties, acquired what, in the absence of such energy, would have been denied to them.

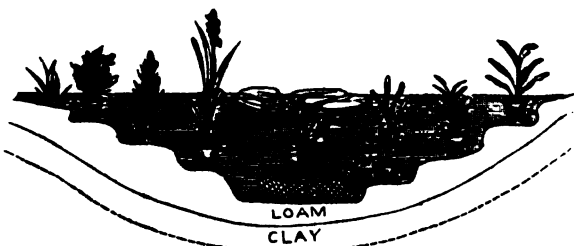
THE GARDEN AQUARIUM.—There are thousands of situations where a supply of water, either from a spring or a running brook, may be introduced into a garden or grounds with great effect.

"Mildly and soft the western breeze
Just kissed the lake, just stirred the trees,
And the pleased lake, like maiden coy,
Trembled, but dimpled not for joy;
The water-lily to the light,
Her chalice reared of silver bright."

In most suburban gardens there is sufficient space for a small aquarium; we know of several that are supplied from the village water-works, where a tiny jet is constantly playing, and refreshing the ferns and other moisture-loving plants dispersed among rocks and stones, goldfish disporting in a rustic basin below. If a space of only eight or ten feet diameter can be spared for the purpose, it will greatly add to the gayety of the scene from the windows. A circular pond of five feet in diameter may be surrounded by a border of rock-work of twelve or fourteen inches, the dark stones being merely loosely laid on an even surface, and beyond this a rim of turf two feet wide. The pond should be well puddled with clay, and over the clay a stratum of loam and sand; the rock-work should be formed of dark stones of small size; a light fence of iron-work or thick wire surrounds the whole, and on the turf about eight or ten standard roses should be planted so as to form a ring, the little fountain throwing its jet from the apex of the central rocks (stones). The stones should be planted with one or two bushes of recumbent juniper; periwinkle, lyopodium, stone crop, ferns, and some showy perennials, may be set in the crevices. The beauty of this little collection far excels a parterre, and stands out brightly against the evergreens beyond.

A more extensive garden aquarium may be introduced at the base of a sloping bank, beyond which a mass of shrubs and trees secures shade and coolness to the lounge, and completes the picturesque character of the scene; it must be removed some distance from the house, deriving its chief beauty from repose, and the apparent absence of human dwellings. In such a scene, rustic arbors and seats, old tree stumps, crowded with mosses and

ferns, are suitable ornaments, while the rockery itself may be converted into a garden for Alpine plants and ferns, the portions sloping towards the water being planted with marshy and aquatic plants, revelling in moisture under the shadow of alders and willows. An island and peninsula should not be attempted, unless the water covers a large space, and has its dimensions somewhat concealed by trees. It must be constructed according to correct principles to insure success; a concave hollow must be dug, of the needful dimensions, sloping steadily from the outer rim to a depth of not less than six feet in the middle. Over the bottom must be placed a layer of puddled clay, six to twelve inches in thickness; above the clay, a layer of rich, sandy loam, or well-tempered soil from the bottom of a pond, must be arranged in circular terraces, like the seats in an amphitheatre, so as to form a series of shelves of various depths, from the margin to near the centre. On these shelves may be planted the aquatics, which are intended to be grown in the water. Thus you can place roots at various depths, so as to submerge each sufficiently, which you could not do on a slope, the pots being of course removable for renewal or change of plants, or during severe weather. In any case, the bottom must be of well puddled clay, and the mould above it a strong loam, with a surface of sand and pebbles. No one should undertake such a work unless thoroughly persuaded that he has force enough in himself or his assistants to keep it always in the best condition. Our engraving gives a sectional view of such a construction.



GRAPES.—A letter from Dr. C. W. Grant says: "We have now five varieties of grapes that are fully equal to the best five that are grown in the open air in the vicinity of Paris; to develop their excellence fully, they require the care and skill which those of Paris receive. Rebecca, treated on the 'Thomery' plan, would not be inferior to the Chasselas in any respect, and Delaware would equal the Frontignans in all respects except size, which, to my judgment, is saying as much as we know how to say in praise of a table grape. The Black Hamburgs, for size and productiveness, and as a market fruit, deserve the eminence generally awarded, but, measured by excellence of flavor, they must fall below the Grizzly Frontignan.

"The great excellence of the Herbeumont is known to but few, and the Lenoir is scarcely inferior, and is two weeks earlier in ripening. Of the Diana, it is superfluous to speak; when badly treated, it exhibits but little of its high character, which, under favorable circumstances, leaves little to be desired in a hardy out-of-door grape."

"The doctor adds: "In January, my propagating houses were burned, and nearly all the cuttings of grapes destroyed; so I shall be delayed in giving a full supply of vines to the country, which is a disappointment to me. One of the houses was a new one—one hundred feet by twenty-six; it stood but twenty-four hours after completion." The doctor still advertises a fair stock, however.

NEW YORK STATE AGRICULTURAL TRANSACTIONS.—Mr. B. P. Johnson (the able Secretary) has placed us under obligations for a copy of these valuable *Transactions*.

In the first article of this number will be found some of the reasons why *books* were for-

merly scouted by farmers. "Book farming" was a term of reproach in former days. Now how stands the case? The books are the choice receptacles of the experience of science and labor. The man of science and the practical workingman associate for mutual benefit. The results are, drainage is practised; improved implements are introduced; insects are studied and destroyed; colleges are founded, and chemistry, &c., taught; educated labor stands pre-eminent among the arts; the farmer values the library; new and better grains are sought for; our people test the every form and combination of the mechanical powers to till, reap, harvest, or fell the forest. Contrast this with the idle dozing of the Spanish race, where the plough in use might be recognized by Adam, if he should revisit Spain or Cuba, as the one invented by him!

New York is a great State. She has excellent men on her soil, and her *Transactions* are very choice reading. Dr. Fitch continues his contributions on insects, which are now indorsed by the approbation of the scientific men abroad.

CONCORD GRAPE.—Mr. Samuel Miller suggests that the only way to reconcile conflicting opinions regarding the Concord Grape, is to suppose there are two kinds called by that name. It is possible; and those having information on the subject will do a public favor by communicating the same.

PATENT TREE PROTECTOR.—The agent of this tree protector has exhibited a model of the apparatus intended to prevent the ascent, on the body of the tree, of the caterpillar. It consists of a varnished cotton cloth shield, in the shape of an umbrella, divided into two parts, to enable the operator to fasten it round the body of the stem; these two parts are joined by a tin catch and a rim, which go round the whole apparatus. Inside of the rim, and on the edge, is a tin trough, to be kept filled, or nearly so, with oil or turpentine. The insects ascend the body of the tree, are stopped by the projecting umbrella, when they retreat down to the oil reservoir, and are caught in it. The apparatus is simple and effective for insects that invade trees by ascending the stem. The patentee is Josiah Foster, Sandwich, Mass. Agent in Philadelphia, Wm. Denslow, 221 S. 5th St.; and he has the town and county patents for sale.

MAHONIA JAPONICA.—This is one of the loveliest new plants, perfectly hardy, and recently introduced from Japan. It has a large leaf, and fine flower. It may be seen both at Mr. T. Meehan's, Germantown, and Mr. Buist's. A valued correspondent (Mr. W. N. White, of Georgia) writes us: "Just now, my great favorite is the *Mahonia Japonica*. My best is some three feet high, covered by thousands of small, golden bells, springing out from the evergreen foliage, and what a lovely, cheerful green it is!—a most attractive sight. What an improvement on the *aquifolia*!" It is, indeed.

NEW POLE BEAN.—Mr. White forwards us a new pole bean. He says: "I call it the White Prolific (not White's). Our country people call it the 'Flat Horse Bean.' It will furnish you with string beans as abundantly as the Lima will with those to shell; stands the heat perfectly well, and the pods are as tender and brittle as could be wished. It agrees perfectly with our dry, warm summers, and will succeed admirably at the North. It resembles the Dwarf Bean, or Royal Kidney, and when ripe the fruit is excellent for winter use." Mr. White adds, judiciously: "The Lima Beans do not succeed in many gardens, because planted too thickly; they do best in single rows, and where otherwise, five feet by two and a half is near enough to bear freely, and the space between can have a crop of early potatoes, &c., taken off from it."

DELIGHTS OF THE GARDEN AND LAWN.—A valued correspondent writes thus of his enjoyments, and, we have no doubt, very truthfully expresses his pleasures: "I and my man, Jeemes (the latter, especially), are at work, this fine spring morning, draining wet spots, feeding trees, relaying sods on the lawn, and preparing holes for transplanting. Can there be anything more delightful under the sun than this working (moderately!) in the dirt? How pleasant to wander through your grounds in spring, and find your old friends alive, and coming out to greet you! Then, what a glorious, healthy appetite it gives a sedentary man!! It makes him almost believe he had overrated his books and his intellectual pleasures. Beef-steak, and a cup of coffee, are things not to be despised even at Athens! A saucy young lady looking over my shoulder, requests me to add: 'I wonder if mamma will ever be able to teach me that there can be any pleasure in house cleaning like you describe in your planting' To which I reply: 'Certainly, my young friend; you will find pleasure in performing every duty;' but she don't seem to understand me. The said lady was much amused with the Boston account of the female skaters, and as a supplement thereto I beg to add the following stray paragraph: 'The man who stoutly objected to his wife's learning to skate, a month ago, has at length come to the conclusion that he is perfectly willing to let her slide.'"

NEW THUJA.—At Mr. Buist's establishment, near Philadelphia, may be seen the new Thuja Borealis, which promises to be an important addition to our list, and is hardy. There has been some error in naming the Thuja gigantea; the decurrens has been sold for the gigantea, and vice versa. Now the real gigantea of Rivers (heretofore called decurrens) is hardy, but decurrens (sold for gigantea) is tender here. It will be well to remember this.

DRACENA SPECIOSA VARIEGATA is an improvement on terminalis; this and nobilis will hold a superior rank to all others yet introduced.

EVERGREENS.—In looking over the evergreens in this vicinity, we find Abies Frazerii doing remarkably well; Menziesii, the same; Webbia and Smithiana, poor, and much out up.

LANDSCAPE GARDENING ON A LARGE SCALE.—If one of the best efforts of the landscape gardener is exhibited in gracefully appropriating the grounds, &c., of one's neighbor, a correspondent who has achieved the following, deserves to be considered a master: "But my great work, this winter (concluded yesterday), is an *allée*, or aisle, six feet wide, and three miles long, through my cedar wood, and through three or four of my neighbors' woods, striking the river half-way over, and terminating in a factory at ———, which at night looks like Aladdin's palace; and arched over, apparently, the whole distance, it is entirely *sui generis* for this country, and like the *pleached* alley of Shakespeare."

THE PURE JUICE OF THE GRAPE.—J. J. SMITH, Esq.—DEAR SIR: The following anecdote (which I picked up lately) may amuse some of your temperance readers. My friend, Dr. S., told me that about thirty years ago—when our native wines were much talked of, but scarcely known—he was invited by a hospitable farmer of a neighboring State, to dine with him, and, amongst other inducements, was promised a glass of native wine—the "pure juice of the grape." At dinner, the wine was produced; it was of a fine red color, like claret or Burgundy. "There," said his host, "is something that I am proud of, for I made it myself, and know it to be a pure article—none of your foreign, mixed stuff." The doctor took a good taste of it, made a wry face, and set his glass down, remarking "that it was unlike any wine he had ever tasted." "I fear," said his friend, "you don't like it; but you need not be afraid to drink it, for it is a genuine native wine, and I pledge you my word it is the

'pure juice of the grape,' without a particle of sugar, or a drop of water in it. I assisted myself to gather the grapes of the best varieties from the woods, had the bunches packed carefully in a new, clean barrel, and filled it up with whiskey—the best old Bourbon I could find—to extract the grape juice. If that is not the pure native, I don't know what is." The doctor suggested that "it might be native enough, but was not wine." "Nonsense," said his friend; "have I not made 'peach liquor' that way many a time, and why not wine?" It was a long time before the doctor ventured to taste another glass of native wine made in that neighborhood. But they make excellent wine in that State now, since the introduction of the Catawba Grape.

R. BUCHANAN.

Cincinnati, 15th of April, 1858.

ALTON, ILL., Feb. 2, 1858.

MR. EDITOR: I am a young man yet, although I consider that I have learned a great deal from your most valuable journal, and can with pleasure say that there is as yet no magazine printed in this Union that can compete in rural art, taste, or cheapness, with it; and I look forward with pleasure when it will be found in the possession of every young amateur in the West. There are now three young men in this city who are your best friends, viz: Miller, Morgan, Barry; none of us are over nineteen years of age. It is also held in the highest estimation by many older amateurs in this vicinity.

I have in my fruit garden some very rare fruits, and I will tell you in the future if they are successful or not.

Yours, truly,

ADDISON SMITH MILLER.

HUMBUGS.—A correspondent in the West writes us very naively thus: "On the subject of humbugs, I must confess I rather like them; they give employment to a large class of ingenious persons denominated *quacks*, who are fit for no other occupation; and it is a beneficent provision of nature that has constituted the inside of the skulls of a certain portion of the human family to be preyed on by these parasites." A very benevolent view, indeed, but it might be wished there were not quite so many. When, however, hundreds of dollars are daily expended in America by advertising astrologists, one can hardly say that all the gulled are dead yet.

ROSES, ETC., FROM PITTSBURG, PA.—Mr. J. S. Negley, of Pittsburg, Pa., has backed our recommendation of his nursery by an elegantly packed box of novelties of superior excellence, and as an evidence of the advance of horticulture in that section of the West, we append a list of the newer articles:—

Roses.—Jules Margottin, General Castellan, William Masson, Souvenir de la Reine D'Angleterre, General Jacqueminot, and Madame de Cambaceres—all hybrid perpetuals in the best condition, with the celebrated tea-rose, Gloire de Dijon.

Verbenas.—Evening Star, Geant de Bataille, Celestial, Admiral Dundas, Mrs. Holford, Pet, Odorata Perfection, Joshua, Sarah, Ellen Murdoch, Elizabeth Strange, and Glory of America.

Petunias.—Striata Magnifica and Imperialis.

Veronica.—Meldensis.

Heliotrope.—Splendidum.

Lantanas.—Alba Grandiflora, Souvenir d'Alexander, and Crocea superba.

Geraniums.—President, and James Hardrop—on all which we shall report in due season.

FUCHSIAS AND VERBENAS.—To Mr. W. C. Strong, of Brighton, Mass., we are indebted for the following new plants:—

Fuchsias.—Fair Oriana, Little Treasure, Etoile du Nord, Souvenir de Chiswick, Star of the Night, and Venus de Medici.

Verbenas.—Yennadesse, Metropolitan, Radiant, Rubens, Mrs. French, and Geant de Baille.

ROSES FROM MR. RIVERS.—From Mr. Rivers, of Sawbridgeworth, Herts, England, we acknowledge a noble present of fifty of the finest and newest standard and dwarf standard Roses, by steamship via Southampton.

VALUE OF THE EARTH-WORM.—The ground is almost alive with the common earth-worm. Wherever mould is turned up, there these sappers and miners are turned up with it. They are nature's ploughmen. They bore the stubborn soil in every direction, and render it pervious to air, rain, and the fibres of plants. Without these auxiliaries, "the farmer," says Gilbert White, "would find that his land would become cold, hard-boned and sterile." The green mantle of vegetation which covers the earth is dependent upon the worms which burrow in the bowels of it. What conveys a more definite idea of the magnitude of their operations, they are perpetually replenishing the upper soil, and covering with soft and fine material a crust which before was close and ungenial. They swallow a quantity of earth with their food, and having extracted the nutriment they eject the remainder at the outlet of their holes. This refuse forms the worm-crusts which are the annoyance of the gardener, who might be reconciled to them if he were aware that the depositors save him a hundred times more labor than they cause. They play a most important part in the economy of vegetation, and we see why they teem throughout the surface of the globe. Mr. Charles Darwin has shown that in thirteen years a field of pasture was covered to a depth of three inches and a half with the mould discharged from their intestines, and in another case the layer they had accumulated in eighty years was from twelve to fourteen inches thick.—*Quarterly Review*.

ANSWERS TO CORRESPONDENTS.—(MANGO.) It was Washington Irving, in *Salmagundi*, who gave the derivation of "mango:" "My cousin, Cockloft, was once nearly annihilated with astonishment on hearing Jeremy trace the derivation of mango from Jeremiah King; as Jeremiah King, Jerry King, Jerkin, gherkin, cucumber, mango."

Frigi Domo is a canvas made of patent prepared hair and wool—a perfect non-conductor of heat and cold, thus keeping a fixed temperature. Its cost in London is 1s. 8d. per yard run, and two yards wide; and to give our inquirer a clue to import it, *Elisha Thomas Archer*, 7 Trinity Lane, Cannon St., city of London, is the vendor. In England, it is used without glass. We trust some one will introduce it here.

(JOHN A. TOWNLEY.) The *Taxus Canadensis* makes a beautiful spreading shrub, and bears the shears well; but it will never rise to more than four or six feet high.

(J. B. ROE.) If you will observe the growth of a tree for one season, you will find the answer to your question will be "No!"

(H. A. TREY, Crescent City, Iowa.) Your plant is the *Clematis Virginiana*. We are glad to find this beautiful native vine attracting such general attention.

Margaret.—We scarcely can name a single plant that is more useful in ornamenting a garden than the *Canna major*; the leaf has an oriental appearance, shall we say more palm-like than anything else so easily obtained? Its bulbs increase much every season; before frost they should be taken up, and kept rather dry under the stage of a greenhouse; they will grow larger if started in a hot-bed in the spring, and then plant them out in a bed that has been dug out to the depth of two feet, with some manure to give them a little warmth to start with, and the bed filled up with refuse potting soil, or the richer soil of the garden. Grouped, or in a circle, they are very ornamental; the same of *Canna Indica*,

which bears flowers; another circle may consist of *Canna discolor*. They all love water. The Chinese *Pæonies* require a rich light soil; good sandy loam suits them well, and they are readily propagated by dividing the roots in April or May, when the young shoots are a finger long.

"If after a decoction of herbs in a winter night," says an old author, "we expose the liquor to the frigid air, we may observe in the morning under a crust of ice, the perfect appearance, both in figure and color, of the plants that were taken from it." *Peter*. (Just so; and if you think of your lady love before a refracting telescope, you will see her next morning ironing your collars before breakfast; after which she will inspect the state of your wristband buttons, and before night comb your head. Try it.)

A CORRESPONDENT writes for a list of the best continuous-blooming *Roses*—will find a capital list in our volume for 1856, page 224. The following is from *Glenny's* (London) *Garden Almanack: Constant Bloomers*.—*Cymedor*, crimson, tinged with purple; *Duchesse de Montpensier*, delicate pink, satin-like; *Duchess of Sutherland*, pink, of beautiful form; *Prince of Wales*, rosy lilac, shaded; *Armosa*, delicate pink, small; *Pomponne Parfait*, purple; *Comice de Seine et Marne*, cherry red, shaded; *Leveson Gower*, rose color, large; *Madame Angelina*, cream color; *Queen of Bourbons*, most beautiful fawn; *Aimee Vibert*, pure white; *Fellenberg*, bright crimson; *Miss Glegg*, pure white, centre tinged; *Goubault*, brilliant rose color, large; *Maria Leonida*, white, tinged with pink; *Blairi No. 2*, pale blush; *Paul Ricaut*, bright crimson. *Constant Bloomers, Show Flowers*.—*Baronne Prevost*, bright rose color, large; *Geant des Batailles*, most vivid scarlet crimson; *Souvenir de la Malmaison*, creamy flesh blush; *Comte de Paris*, deep flesh-colored blush; *Devoniensis*, creamy white and straw. *Continuous-blooming Roses of Peculiar Character*.—*Celestine*, pink rose, fine form; *Jaune Desprez*, rich fawn, yellow centre; *Archduke Charles*, or the *Changeable Rose*, pink to crimson; *Cramoisi supérieure*, brilliant velvety scarlet; *Buret*, carmine, shaded; *Safrano*, bright apricot color. *Climbing Roses of Peculiar Character*.—*Gloire de Rosamene*, scarlet crimson, brilliant. *Continuous-blooming Climbing Roses of Peculiar Character*.—*Frudence Røser*, pink, with fawn centre; *Aimee Vibert scandens*, similar, but a climber; *La Biche*, white, centre flesh. *Noisettes*.—*Madame Masset* and *Madame Schultz*.

EVERGREENS ON THE SEA-SHORE.—(W.) Where the soil is of fair average quality, *Araucaria imbricata*, *Pinus insignis*, *P. laricio*, *P. Austriaca*, *P. pinaster*, *Cryptomeria Japonica*, *Cupressus macrocarpa*, and *Abies Cephalonica*, do well if not too cold. *Cedrus deodara* thrives just so long as shelter is provided; but no sooner does it outgrow its nurses or other protection than the leading shoot becomes blighted, and the habit of a shrub supersedes that of a tree. Where shelter has been provided and continued, mere proximity to the sea has not been prejudicial.

APPLE-PIE MELON.—However this may taste in California (where it has been greatly puffed), it has not done well here. A pie of it looks like the apple-pie, but the taste is perfectly neutral; all the acid and flavor you will have to put in from some other source.

CATALOGUES, ETC., RECEIVED.—Bridgeman's Descriptive Catalogue, No. 4. Fruit and Ornamental Trees, Shrubs, Vines, &c., for sale at Nos. 876 and 878 Broadway, New York. Nursery and Greenhouses, Astoria, N. Y. This is a very carefully prepared and accurate list of the best ornamental and fruit-trees, well deserving the attention of planters, gardeners, &c. At the establishment of the Messrs. Bridgeman, every desirable article in their line may be obtained.

A. Frost & Co.'s Descriptive Catalogue of Fruits, cultivated and sold at the Genesee Valley Nurseries, Rochester, N. Y. An ample list of a great assortment, every way worthy of attention. We are pleased to see these gentlemen's remarks on dwarf pear-trees, which

they recommend for the garden and for amateurs only. They admit that much dissatisfaction has arisen from want of care in their cultivation, and a selection of varieties not suited to the quince stock. When the mania raged the most, too little attention was paid to this matter, and of the millions of trees planted, a large portion have been abandoned. Better information now exists, and amateurs may put their orders into safe hands like Messrs. Frost & Co, whose large octavo catalogue should be one to keep and refer to. A volume of bound catalogues is an excellent thing to preserve, and we are glad to see our best nurserymen adopting a uniform size, which suits them for such a purpose.

Sherwood's Self-Acting Lawn and Farm Gate, patented by W. Sherwood, Beloit, Wis. A circular with an engraving exhibiting a very good contrivance, with the apparatus above ground.

Supplementary List of New Roses, Bedding Plants, &c. Negley & Co., Pittsburg, Pa. All that is new and excellent is here offered for sale.

Supplement et Extrait du Catalogue des Plantes Exotiques cultivées dans les serres de J. Linden, à Bruxelles, 1858.

List of Plants cultivated and sold by Geo. C. Thorburn, Newark, N. J. A most choice collection, including Dahlias, &c. &c. &c.

Thirty-Fifth Annual Report of the Mercantile Library Company of Philadelphia, Jan. 7, 1858. An excellent institution, which is moulding the mind of a large class of our fellow-citizens.

Report of the State Agricultural Society of California. This arrived too late for notice; it is a very interesting volume, and relates so many marvels of horticulture that we shall make an abstract for the ensuing number.

Biddy and the "Old Dominion," is a pamphlet giving an account of Arthur's "Old Dominion Coffee-Pot," of which many cooks give a good account.

B. K. Bliss' Seed List. A Descriptive Catalogue of all select varieties. Springfield, Mass. The same of Dahlias, Verbenas, Hollyhocks, Carnation, and Picotee Pinks, &c.

GOSSIP.

— The cobweb-like spawn frequently observed about the roots of trees, especially of evergreens recently set out, should receive immediate attention whenever detected. The remedy to adopt if a plant appears in an unhealthy state (if in pots or planted out), is to take it up, being careful to preserve all the roots, and shake off every particle of soil from them, wash the roots, shaking and dipping them in water several times until they appear quite clean. Transplant either into the open ground, or into a wide, flat basket, have the roots disentangled, and laid out regularly. In spring, or early in the autumn, is the best time for performing this operation. In many cases in which Conifers are grown, and annually shifted into larger pots, probably for some four or five years, the roots become entangled and twisted into each other, and they are often planted out in that state, only loosening a few of the bottom ones; this kind of treatment, in a few years, must prove injurious, if it does not in time kill the plant. Conifers are often raised and grown in pots for a long time, sent to America, and afterwards planted out in the open ground with the roots matted together, and the ball entire. In such cases, the soil should be shaken from the roots, and untwisted up to the stem, and regularly laid out. A stake is necessary for a year or two, to keep the plant steady.

— Frasenius, a German chemist, has made experiments on various fruits, demonstrating which are best, and why. The more a fruit contains of soluble matter, the more it is esteemed—such as the peach and greengage. And the more a fruit is cultivated, the more does it

contain of sugar, and the less of free acid and soluble matter. These facts may serve for household hints.

— Rudolph Wagner has recently shown that a solution of decomposed salicilate of potash yields a liquor strongly charged with the scent of roses; and if this be distilled, it becomes an excellent artificial rose-water. Out of this a new branch of industry may be created, for the substance is comparatively cheap, and rose-water is much in request as a luxury for the toilet, &c.

— A new kind of gutta percha, and, it is said, the best, has been imported into Holland from Surinam. It is a product of a species of sapodilla, which grows in such abundance, that, for years to come, the supply will be equal to the demand.

— We shall shortly give a drawing of a stove for heating greenhouses by gas; it is now used abroad with manifest advantage, as it admits of regulation with nicety to any degree of temperature. Gas is now stated to be a preventive of contagion; for, according to accounts from Lisbon, the yellow fever did not visit the houses in that city which are lighted with gas.

— Professor Cook stated, at the last meeting of the American Association for the Advancement of Science, that a subsidence is going on all along the coast from Delaware Bay to Boston. In New Jersey and Long Island, the effects are especially observable. Hundreds of thousands of acres of submerged forest lie a few feet below the swampy surface, and many farms have diminished within the memory of man. The Professor estimates the subsidence at two feet in a century. Two thousand years ago, Ovid sang:—

"The face of places and their forms decay,
And that is solid earth which once was sea;
Seas, in their turn, retreating from the shore,
Make solid land what ocean was before;
And far from strands are shells of fishes found,
And rusty anchors fixed on mountain ground;
And what were fields before, now washed and worn
By falling floods, from heights to valleys turn."

— PAMPAS GRASS.—On a former page will be found an engraving of this new favorite. The *London Florist* says: "For the decoration of gardens, the shrubbery, and rock-work, it is one of the most useful plants that have been introduced for some time. In appearance and height it rivals the Bamboo, and we can imagine few things that look better by the side of a piece of water, backed by clumps of dark Evergreens, Portugal Laurels, etc. *Gynerium argenteum* covers vast plains, the resort of immense herds of the quagga and wild horse, in the neighborhood of Buenos Ayres and the northern parts of Patagonia."

— CURE FOR THE POTATO DISEASE.—Mr. John Kyle, to whom the French Government, in conjunction with the Agricultural Society of France, lately awarded a gold medal, besides a handsome prize in money, for his discovery of the cure of the vine disease, has found that the disease which has for so many years attacked the potato, is in reality the same distemper. The application of sulphur was Mr. Kyle's remedy; but as that material is expensive, he substituted quick-lime, and the result has been successful. Like the grape disease, the first manifestation of the potato distemper must be watched, as it is in its earliest stage that the application of the throwing the lime lightly on the "shaws" when the disease first appears.

— Mr. Kidd, a famous English gardener, says: "The easiest, the quickest, and, above all, the most successful way of propagating verbenas, lobelias, and such like, is to fill flower-pot saucers with sand only, and to put in the cuttings as thick as they will stand, and place the saucers in a greenhouse or a parlor, or any close room where the heat is not lower than 50°; and I vouch for it, that nine hundred and ninety-nine out of a thousand will strike roots in a few days. Then let them be put into pots, boxes, handlights, or frames,

&c. Only try the experiment, and you will be surprised. What would you say to this *Ne Plus Ultra* twenty years ago?" This is the much talked of "new mode."

— This subject of rapidity in striking is attracting much attention. D. Beaton, in the next *Cottage Gardener*, says: "Watercress will come from cuttings on the dining-table, if you throw pieces of it in a basin of water; and so will *Mimulus*. It is therefore evident that some cuttings will grow in sand in the sun, and other cuttings will grow in water out of the sun. Now mix the two systems, and you have Mr. Kidd's mode. He has tried it, proved it, and he is quite certain it is better and more safe, with much less care, than any other mode whatever, for *Verbenas*, *Calceolarias*, *Lobelias*, and a host of similar plants. Also, that one boy can put in as many cuttings as five men can make in the time. He fills a saucer one-half with white sand, and one-half with water, or makes the sandy, watery compound thick enough to hold up the cutting. If it was all water, the cuttings would fall over on one side, but it is held upright; it wants the water kept up, and the cuttings will root rather faster than in the usual way, under the same degree of heat. For a kitchen window, this is the best way in the world for cuttings."

— A tell-tale flower-pot, which will tell when a plant in it is in want of water, is a recent invention. No more queries about how often or how much water to give to a plant. They are sold by Mr. Smith, 3 Queen's Road, Chelsea, who says: "A very important advantage in these pots is, that on account of their becoming a deeper color in proportion to their dampness, they give a clear indication of the state of the roots, which enables the attendant to regulate the watering with the greatest nicety." This "clear indication" was shown to us by one of the pots half full of water, and another empty; the dry one is of a light stone color; but the moment the water runs into its porous sides, it becomes a dark, shaded color. They are certainly handsome and well-made.

— The following wash destroys both green and black aphid on flowers and fruit-trees: Four pounds rosin, one pound soda ash, or five pounds rosin, one pound caustic potash; three and one-half gallons water. Boil them together in an old iron pot until the rosin is dissolved. If caustic soda is used, allow the dissolved rosin to settle to the bottom of the vessel; throw the supernatant mother liquor away, otherwise the rosin will not combine with an additional quantity of water. Add one quart of the dissolved rosin to three gallons of water, and syringe your trees or flowers with the solution, which is a rosin soup, and the effect is seen in a very short time by the disappearance of the aphid; care, however, should be taken that the solution is not too strong, otherwise the blossom buds may be destroyed as well as the aphides. The discoverer of this has successfully employed it both in his hothouses and in the open air, for several years. Let any trying the experiment for the first time, use it rather too weak than too strong. It is well known that first crop of aphides hatch from the ova with just such a temperature as sets the sap in motion, and swells the buds; therefore, syringe as soon the buds expand, and catch the aphides without their top coats—in other words, before the leaves have unfolded themselves, and the insects have of course not had time to roll themselves up by their incessant punctures of the leaves. By thus syringing the trees, the whole crop of aphides is killed, and the gardener then waits until the trees have blossomed, and the fruit is well set; he then gives another syringing of the trees, which keeps them in a clean condition. Adopt the same plan with roses, asters, chrysanthemums, &c., as well as plums and cherries.

MISCELLANEA.

The soil of old vineyards is found to be deficient in potash. To remedy this, it has been suggested that granite should be heated to redness, plunged in water, and ground to powder.

Mix this with about half its weight of lime, and expose the mass to the action of the atmosphere; this compost may then be applied as a manure to the vines, with a probable hope that it will remove the disease now so prevalent.

GAS TAR.—This should never be used in the inside of plant-houses. Its fumes are destructive to vegetation. Even when used out of doors, it is sometimes mischievous if very near plants, until, with time, its volatile matter becomes exhausted.

ROSES FOR BEDDING.—The following make beautiful beds: *Devoniensis*, Mrs. Bosanquet, and *Souvenir de la Malmaison*. The most striking bed that I have ever seen, however, was made with dwarfs of *Géant de Bataille*, with the *Noisette Aimée* Vibert planted between, and pegged down over the bed in autumn; the white blossoms and glossy-green leaves of the latter make a fine contrast with the vivid crimson of the former.—D. K.

THE PLUM, like other fruit-trees, flourishes best in well-drained, retentive, clay subsoil; although it luxuriates in a strong, clayey loam, thorough drainage is requisite to prevent the trees being covered with moss, which often infests them in damp situations, and in which state it does not exactly render the trees unfruitful, but fine fruit cannot be looked for till they are cleaned from this parasitical pest, which can be done by dressing the branches with strong lime-water, or a mixture of soft-soap, salt, and urine. However, it is well to bear in mind the old adage, that "A preventive is better than a cure;" therefore guard against the evil, if possible, by proper drainage, and by top-dressing with manure, either liquid or solid, should they manifest any sign of feebleness.

THE ROSE.—The Rose, with all her beauty, has only of late years become a "florist's flower." With all her glowing colors and her rich perfume, she has been woefully wanting in shape; and we have only to recall, in proof, a pan of Roses, as exhibited some ten or dozen years ago. Blooms, large and beautiful (if you did not mind the green "eye"), were plenteous; but blooms like Paul Ricaut, Madame Rivers, Louise Peyronney, and many others, which we shall see in July, were indeed few and precious.

GREAT RESULTS.—The *Report* of the California State Agricultural Society contains the following statement: "We visited the garden of the Rev. Mr. Kroh. His lot of fifty by one hundred feet, contains two hundred and forty-five grape-vines of different ages, sixty-nine of which are in full bearing. He has twenty-seven apple-trees, eleven plum-trees, seventy-nine peach-trees, seventy-three nectarines, four pear-trees, thirty-seven apricots; also cherries, quinces, &c. Whole number of trees and vines, one thousand one hundred and twenty-one, besides considerable shrubbery and vegetables." That is the man to preach to the people.

Notes for the Month.

MAY.

VINEYARD CALENDAR.

BY B. BUCHANAN, CINCINNATI, OHIO.

THIS is said to be an idle month for the vine-dresser; but that is a sad mistake. Much has to be done, and at the right time, too. Tying the vines to the stakes will of course have been finished by the middle of last month, and probably hoeing or ploughing by the

latter end of it. Many cultivators prefer not to work their vineyards until the first week in May, to prevent the buds from pushing out too early, and being exposed to injury from late spring frosts. My own observation favors this recommendation.

With the first warm weather in this month, the young shoots will grow rapidly. Superfluous ones should be rubbed off, especially those from the main stock near the ground, leaving one on stalks that are too long, that it may make a shoot in two or three years strong enough to cut down to, and form a new head for the vine. By this means, the vine is kept down to a proper height, and within reach and control. When the blossom or fruit buds are fairly developed, and just before they expand, the top end of the tender branch is pinched off within two or three joints of the last or upper bud. The canes or branches intended for bearing wood next year (two or three), are never pinched in.

Towards the latter end of this month—if the season is early—many lateral shoots will require pinching or cutting out, that the strength of the vine may go to the fruit, and not be expended in useless suckers. Tying up the young fruit branches to the stakes, may also be necessary at this time. Ties made of rye straw are the cheapest and best. Take a handful of straw; make the butts even, and cut the heads off; wet them, and take two or three straws, and twist round the young vine and the stake, and fasten the ends like the band round a sheaf of wheat, cutting off the ends if too long. By an expert hand, this is done very quick. Wheat straw is the next best to rye.

INSECTS.—Keep a sharp look-out for insects all this month. A small, green worm will be found preying on the tender blossom buds; it may be picked off in the morning or evening. The curenlio is sometimes found after the barriers are formed, and may be destroyed by shaking off into a bucket of lime-water.

DISEASES.—In France, last year, sulphur was used with eminent success as a remedy for the "oidium"—a disease similar to the mildew and rot in this country. Many of our vine-dressers intend to scatter flour of sulphur under their vines soon after the first hoeing, and again early in July, in hopes it may in some measure prevent those diseases. It will probably also be obnoxious to insects.

Another method is, syringing the vines and fruit bunches with sulphur and lime-water. Ten pounds of flour of sulphur, and half a bushel of lime, to forty gallons of water, mixed first with ten gallons of hot water.

These experiments will not be expensive, and may possibly be found useful.

The wine may undergo the second fermentation about the time of the blossoming of the grape. Loosen the bungs of the casks. In a few days it will be over; then drive the bung in tight again.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

VEGETABLE GARDEN.—The great aim of all good cultivators is to maintain a continued healthy and vigorous growth from the time the seed vegetates until the plant arrives at maturity. This is, in fact, the true meaning of the word "cultivation." There is a wide distinction between what is frequently called a well kept garden and a well cultivated one. The former may be kept perfectly clear of weeds by the use of hoe and rake—every spot of surface smooth and highly polished. The vegetables may have a starved look about them, and languish and wither after a hot day; yet, with many persons, such gardening would be considered perfection. This is not cultivation. Hoeing, as understood by the really successful gardeners, means something more than killing weeds, although it also necessarily involves their destruction. His crops are so arranged on the drill system as to admit of deep working between the rows. This is performed with a strong scuffle-hoe, or a suitable broad-tined digging fork; in either case, the soil is deeply and thoroughly broken up, and left rough, loose, and not trampled upon. This is his criterion of beauty in a vegetable garden. He sees no beauty in a smooth and finely raked surface.

Seeds of the cabbage family should now be sown for a winter supply of vegetables; the savoy, broccoli, and Brussels' sprouts, are useful sorts, and should not be overlooked. Cauliflower sown now, and the plants set out, when large enough, in a good soil, will perhaps form heads in the fall, before frost, if the weather proves favorable; and if they do not exhibit any symptoms of heading before frost, they can be lifted and laid in a cool cellar, or planted thickly in a trench, and covered with soil and litter; they will form heads tolerably well either way, and be available when such vegetables are scarce.

GRAPERY.—There is this evil attending the management of a cold grapery: that should a few days of unusually cold or damp weather occur after growth has commenced, there is no way of guarding against a sudden check to the young and tender growths. Such checks

are the most of all things likely to produce disease, which will be observed by the parts becoming mildewed; and the more tender and succulent the growths, the greater the danger in this respect. Therefore I have advised what I invariably practice: that the vines should, from their first starting into growth, be insured to fluctuations similar to what takes place in the open air, although it will not, of course, be so sudden, nor to so great an extent as the outside temperature, on account of the intervention of the glass. In alluding to fluctuations of temperature in connection with plant-houses, it is with reference to the variations of night and day, as opposed to a uniform degree during these periods. The usual advice of books allows a decrease of 8° or 10° during night. What I contend for, is a lowering of from 20° to 25° during the absence of light; so that growth will not be excited at that time. In very warm, sunny weather, the day temperature may be allowed to exceed the night by 30° or 35° . It is a practice quite common to close the house early in the afternoon, and open in the morning. If this method of ventilating be closely observed, it will be found that the inside temperature will rise after the house is closed (when it ought to be gradually cooling), and, in the morning, the thermometer will suddenly drop 5° or 8° after opening the ventilators, when a gradual rise would be more natural. I do not recommend such minor fluctuations as these.

It is also part of the above system of management to allow air at night when the fruit is commencing to color. The sudden change of treatment checks the plant, and retards, instead of hastening, the coloring process. During the month of August, 1856, I visited over thirty graperies in the States of Pennsylvania, New York, Connecticut, and Massachusetts, and the two finest crops were in houses that had never been completely closed during night from the time the fruit was set, although, when the days were cloudy and cool, the ventilators would be kept shut, and opened a little during night. This being in accordance with my own experience, it was gratifying to find it corroborated by others.

In the August number of the *Horticulturist* for that year, Mr. Huidekoper suggests that if I were to observe more closely, I would come to a different conclusion. His remarks only prove what, indeed, we all know: that it is oftentimes easier to throw doubts and surmises around a question than demonstrate its error. My advice is based upon experience, and not, as he supposes, upon analogy.

ROCK-WORK.—A rockery is a very interesting feature in gardens. We do not mean a pile of rocks fantastically heaped in mounds in the midst of highly kept flower beds, or those perpendicular walls of boulders occasionally met with, set in conspicuous parts of a lawn, having the appearance of miniature forts. Rockeries, we have often been told, are dangerous features in ornamental grounds. This is true, so far as attempting to imitate natural rocky scenery is concerned; but it is no reason why we should abandon the cultivation of alpine and other plants which thrive best in such places, because such features have been misplaced. A small affair of this kind—built in a perfectly secluded and concealed spot, shut in on all sides by evergreens, and approached by a small winding walk or path—does not, we conceive, violate any principles of good taste. A simple mound of soil, held together by a few pieces of rocks, may be made very interesting. More elaborate outlines may be made by the use of cement, leaving spaces for setting the plants. For the cultivation of native wild plants, such a place is very appropriate. Ferns may be largely planted. It is by the introduction of these and similar ornaments, that small and limited grounds are frequently more interesting than those large pleasure parks and shrubberies more expensively constructed, but without appropriate display of taste.

PLANTING EVERGREENS.—We are more than ever convinced that the first week of this month, for this locality, is the safest time to plant all evergreen trees and shrubs. Further north, a week or so later will be equally suitable. If the soil is in proper condition, and the roots carefully spread out and imbedded in it, and the plant secured from being swayed to and fro by wind, there is every likelihood of success, so far as planting can effect it. No planter can set a tree to grow that has been severely mutilated in lifting, and only a mere apology of a root left. Immediately after planting, or within a few days, unless it rains, they should receive a thorough watering, if at all practicable. Growth will speedily commence, and a mulching over the roots will insure its continuation. If a few of the terminal points of the branches can be removed without interfering with the form of the plant, it will further tend to induce a speedy and healthy action of root growth.





WISTERIA FRUTESCENS MAGNIFICA
France *France*

Town and Country; or, Which is Best.



HE increase of a taste for Rural Life among us Americans is one of the best features of the times in which we live. The enormous fortunes in Europe have had their uses in exhibiting examples of what superb results may be produced by grouping, gardening, and fine single specimens of trees. Americans have seen the beautiful parks and grounds abroad, and have said to themselves, There is no reason why we should not have beauties of equal interest; we can enjoy at least as much as the nobleman; and we too will plant. Scarcely a traveller returns from Europe without having his ideas of beautiful scenery strengthened and improved. He has seen what effects time produces, aided by industry and taste; and no sooner does he touch his natal soil than he discovers that we possess the means of pursuing rural art, and have trees and sites for improvement not rivalled by any nation on the earth. He projects his rural home, studies the subject, and soon possesses a residence which contains within itself the means of as much true enjoyment as the most palatial mansion. Architects of no mean pretensions, and with a knowledge of our climatic influences, are not now rare among us. With a little study of the hardy trees and shrubs by himself, aided by the advice of those who have already experimented, there have grown in America in every State, and in every direction, beautiful residences, handsome grounds, and intelligent inhabitants, which a national pride rejoices to see, and a mind which can appreciate the true and the beautiful in human nature, no less than in landscape, may well take pleasure in contemplating.

The American citizen, as he acquires the means of repose, eschews the topics and the conversation which cities engender; his local attachments to a street give place to the love of a garden; business is thrown aside as a burthen too great in his contemplation of the brief space he is allotted on earth; and he feels that a quiet mind is the grand desideratum for age, and possibly of infirmity. It was the habit of our immediate ancestry to make the country their home during the warm season only. *Thousands* who have now their houses amid rural scenes would only have visited the country in summer in former times. Our intercourse with such is mostly attended by the remark that "the winter is the pleasantest part of the year in the country." Winter, to the citizen, comprises all the months between August and July! How erroneous! They miss the season of buds and early flowers, and feel not the pleasures of watching the ripening fruit; they know not the beauties of the early snowdrop, and rarely witness the changing colors of the forest, those seasons most in favor with the true lover of the country. When they arrive in summer at the rural retreat, the heat and dust are the reigning tyrants, and they are but too glad to escape the annoyance. Not so the real lover; he enjoys the society of the moving clouds; admires the winter sunsets, and as he paces the south side of his evergreen hedge, wonders that any one can prefer the gas light of city streets, or pay tribute to

the awkward representations of theatrical scenery. No—No!—The real enjoyments of country life begin just as the citizen adjourns to town.

The sleigh-ride of winter, the frozen stream, the evergreens covered with their white robes, the gathering of the ice, the cozy winter evening with one's book, or a friend with sympathetic mind ; the closed shutter which keeps safely out the wintry blast, the sense that our care has secured all the inhabitants, as well as the dumb beasts dependent upon us for shelter, from the terrors of the storm ; all these feelings have a charm which we never enjoy in cities. The evening chat, its reading, or its innocent music or game of chess, a call upon a neighbor, perhaps ensconced in snow boots, or raised on pattens or gum elastics, a walk in the invigorating wind, and an appetite for a cold cut and a salad of one's own raising, or nuts and fruit from your own garden—where can you find the counterpart ? Certainly not in the party illumined by diamonds, and the artificial glow of animated imbecility.

The rational portions of great cities have well considered these things ; and now every railroad which can convey the pent up denizen of closely packed squares, carries *to the country* the sensible father or the youthful husband, in numbers which statistics render perfectly wonderful. We know there are many remain who would wish to do likewise, and to such we would give encouragement by occasionally adverting to the pleasures to be enjoyed, and the moral influences which the country calls forth. But we have a word of caution too. Prepare for this by a little study of vegetable life ; learn to know one form of vegetation from another ; call as many trees and roses by their proper names as possible ; read books on rural topics, and the more you love the best books the better will you enjoy either town or country.

CULTURE OF THE PEAR—AN ENGLISHMAN'S VIEWS.

BY THOMAS RIVERS.

J. JAY SMITH, ESQ. :

SAWBRIDGEWORTH, HERTS, ENGLAND.

My Dear Sir,—I have just had prepared and packed for you some Roses—twenty-four standards, and twenty-four dwarf standards of Hybrid Perpetuals of choice kinds. The case will go per steamer from Southampton, to care of S. S. Shephard, New York. I hope they will reach you in safety, and I beg your acceptance of them.

I was much interested in the discussion in the *Horticulturist* about Pear trees on the quince stock : how strange it is that bad cultivators place the blame on the stock and not on their own mismanagement. I have now had more than twenty years' experience in the cultivation of pears on the quince, and am more than ever convinced that their culture as garden trees is the most agreeable and profitable of all fruit culture ; due regard should, however, be paid to the sorts selected ; for, to a certainty, there are some kinds that even in the most favorable soils will not do well. If I were a young man, I should desire no better speculation than forming a large pear tree garden on quince stocks in your country, to grow the finer kinds of pears for market ; but it must be understood, it should be strictly a pear *garden*, not a grass orchard, or a field full of rude weeds ; for pear trees on the quince require good culture. If the soil is rich, manuring may be dispensed with ;

but in ordinary or poor soils, a surface dressing of manure should be given annually in October, round each tree in a circle from three to four feet in diameter. The ground should not be dug, but kept clean with a horse hoe between the rows, and with the hand hoe round the trees. When the ground is dug or ploughed, the surface roots are destroyed, but if only hoed they soon form a network near the surface and feed on the manure, and the trees are benefited by the roots being exposed to the influence of the sun and air.

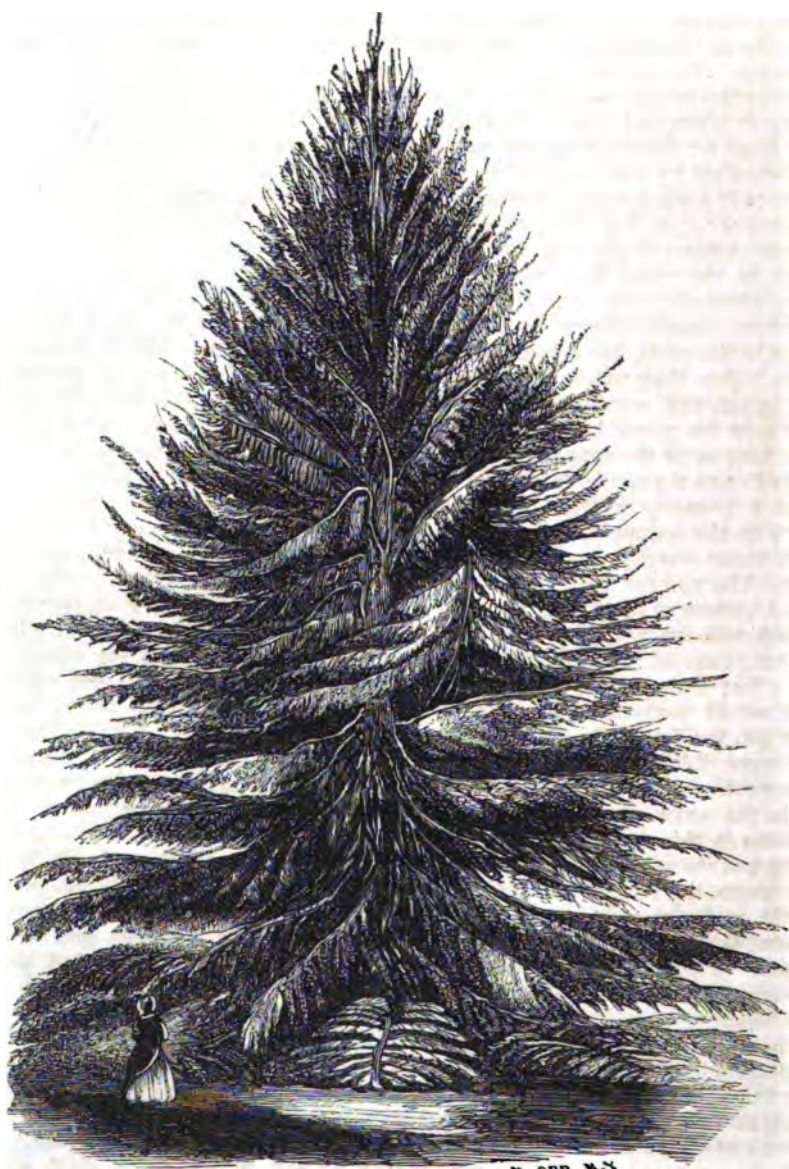
I should form my pear garden thus : rows ten feet apart, from north-east to south-west, so that the sun during the heat of the day shines in the spaces between them ; trees, five feet apart in the rows ; they may stand this distance in the rows from ten to twelve years ; and then, if at all crowded, every alternate tree may be removed, but I am not sure that I should not let them remain longer, so as to form large hedges. My trees, five feet apart in the rows, have been planted twelve years, and it will be five or six years before they touch each other ; they are pruned once a year, generally in August, and sometimes not till after the fruit is gathered in October ; they *must* be pruned once a year : my trees bear profusely, and I am not over nice as to the time of pruning. I have seen a pear hedge in France pruned once a year with common garden shears, and was surprised to find what a quantity of fruit the trees gave. I mention this to show that if pears on the quince have a good soil and climate, they are very productive, even under rough usage ; but pruning in some shape seems absolutely necessary. The soil for a pear garden should be a friable sandy loam, resting on a wet bottom of clay or stiff loam ; if rich, all the better ; if poor, manure, I repeat, will be required. In this country, with our moist climate, I have known pears on the quince succeed well in loam resting on a dry stony bottom ; but with your hot summers, unless manured heavily on the surface, they would perhaps suffer from drought. The sorts I should select for my pear garden for profit, i.e. for market purposes, would be, 1, Louise Bonne ; 2, Beurré d'Amanlis ; 3, Vicar of Winkfield ; 5, Beurré Diel ; 5, Duchesse d'Angouleme ; 6, Easter Beurré, which in your climate must be valuable ; for in the warm parts of France it is unequalled. The Vicar, which in moist seasons in this country is flat and indifferent, only requires a bright sun to bring out its qualities ; for last summer, 1857, which was remarkably bright and warm, my row of one hundred trees, now ten years old and pictures of health and vigor, gave me such pears as had never before been seen in Covent Garden market ; they were large, clear and beautiful, and almost "best." I should also feel inclined to try Beurré Hardy as a market pear ; in vigor, the tree on the quince equals the Vicar ; and its fruit is large and excellent.

The cultivator of pears for market, should confine himself to as few kinds as possible ; and if in the course of a few years he finds any one or two that suit the soil and climate better than others, he should extend their culture as much as possible. I have found this the case with Louise Bonne, (there is now no occasion to add, "of Jersey," for the old sort is scarcely known,) and so I at once planted two thousand trees : no act of my pomological career has given me more pleasure and profit.

I have not mentioned the preparation of the soil ; for all your books on fruit tree culture go into that fully ; but there can be no harm in saying that I have my fresh ground forked to twenty-two inches in depth ; and I never turn the surface soil to the bottom, but keep the surface on the surface.

I am, dear sir, yours very truly,

THOS. RIVERS.



DOUGLAS'S FIR. (*Abies Douglasii*.)

70 FEET IN HEIGHT.

(FROM THE LONDON FLORIST.)

MAGNOLIAS.

OUR favorite family, the Magnolias, for the most part, will strike readily from cuttings, or may be increased by layering the branches, which is the plan most generally adopted with hardy species ; the tender sorts are usually struck from cuttings. The best time for layering is the autumn, but it may be done at any time until February. The branches to be layered must be slit close below a leaf or joint, pegged down, and covered with soil in the usual manner ; neither shorten the branches nor take off any of the leaves. By the next autumn they will make nice rooted plants, when their connexion may be severed, and the plants potted and plunged in the soil, which is necessary to preserve their sensitive young roots from the frosts of approaching winter ; it is also as well to shelter them in severe weather with mats over hoops, particularly while young, as they are tender until they become established and have plenty of good roots. To obtain a stock of any of the hardy kinds the best way is to plant a shrubby specimen in a sheltered corner of the garden, with room all round it, and to bend down and layer every branch that is of sufficient length to reach the soil, and there will always be a succession of shoots to lay down, as fast as the others are taken off. The Chinese sorts, and indeed most of the Asiatic ones, do well when inarched, budded, or grafted on *purpurea*. Inarching is the quickest way of making a large plant at once, although the quantity of wood made use of for inarching would make several grafts, or furnish many buds, so that size is the only advantage gained, and this only for a time. Where a good duplicate specimen is required, instead of stock, this is not of much consequence however. The method of inarching is known to every one who has the least pretensions to be considered a gardener, but for the instruction of such of your readers as may not be sufficiently acquainted with the *modus operandi*, I will explain the way in which this can be performed most successfully. In the first place we obtain a good strong stock of *purpurea* of the desired height, and place it near enough the plant that is to furnish the branch to be inarched, which should be such as can be spared without injury and likely to form a nice plant. The two should be tied so that neither may suffer any disturbance. One side of the branch must then be pared flat for a length of about three inches, and the stock also pared to correspond, so that, when fitted together, the bark of each may be in close contact and united, which in due course they will do after being firmly bound together. If the stock and branch are of different sizes there may be some little difficulty in fitting the one to the other, in which case it is not very material to make both sides fit, provided the bark of each is in contact on one side. The season when inarching should be performed is just before the plants begin to make their growth, when the subsequent flow of sap will ensure a ready union of the two parts.

All the North American Magnolias may be raised from seed, sown in pots or pans rather widely, covered about half an inch deep with soil, and placed in a warm frame. When the young plants are of sufficient size, pot them off and return them to the frame to establish them, after which they may be placed in a cold pit. In this state they are very susceptible of harm, from cold winds particularly ; let the pit be shut up at night as winter draws near, but give them as much air as they can have with safety. They will require repotting as they progress, and when in thirty-two's they may as

well be sunk into the soil of the pit ; this will be a great security against injury, either from the roots becoming too dry or being injured by frost. B.

THE PLANT HUNTERS ;

Or, Adventures among the Himalaya Mountains.

BY CAPT. MAYNE REID.

THE PLANT HUNTERS IN AMERICA.

HAPPY in its title, happy in its recitals, so far as the young are concerned, this book has somewhat of the spirited details of Robinson Crusoe. The incidents of intercourse among the natives, the contests with tigers, and the hair-breadth escapes, whilst traversing the heights and chasms of that noblest of nature's geological structures, rivet the attention of the youthful mind : but the lover of plants will seek in vain for a single fact, or description which its title might have led him to expect would be the burthen of the song. Whether its author had ever been in India, does not appear. He assumes to be the editor and collator of another's labors, and introduces him and others of his class to his readers, thus : " My plant-hunter is no fungus-digger. His occupation is of a nobler kind than contributing merely to the capricious palate of the gourmand. To his labors the whole civilized world is indebted. You owe him gratitude for many a bright joy. For the varied sheen of your garden you are indebted to him. The gorgeous dahlia that nods over the flower-bed—the brilliant peony that sparkles on the parterre—the lovely camellia that greets you in the green house—the kalmias, the azalias, the rhododendrons, and a thousand other floral beauties are, one and all of them, the gifts of the plant-hunter. By his agency, England—cold, cloudy England—has become a garden of flowers, more varied in its species, and brighter in bloom, than those that blossomed in the famed valley of Cashmere. Many of the noble trees that lend grace to our English landscape—most of the beautiful shrubs that adorn our villas, and gladden the prospect from cottage windows, are the produce of his industry." Karl Linden, whose exploits and adventures he proceeds to relate, was a young Bavarian botanist, the son of an uneducated gardener, who having experienced the disadvantages of that condition, determined on the education of his son. At nineteen, Karl was a student in one of the universities, and had imbibed those principles of patriotic liberty that in 1848 were strong in the German heart, and was one of those brave students who gave temporary freedom to Baden and Bavaria. Forced to flee from his native land, an exile in London, what was the young refugee to do. He found English hospitality cold enough. He was free indeed—to wander the streets and beg. Fortunately he bethought him of a resource. He understood the names and natures of most of the plants cultivated in Europe. His early opportunities in the garden of a great noble, where his father was the superintendent, had given him this knowledge ; if he could do no better, he could make a hand in a garden and nursery ; with such an idea in his mind, the young refugee presented himself at the gate of one of the magnificent nurseries in which great London abounds ; he told his story, and was employed. It was

not long before the intelligent and enterprising proprietor of the establishment discovered the botanical knowledge of his German *protégé*. He wanted just such a man. He had plant-hunters in North and South America, in Africa, in Australia,—he wanted a collector for India. To India he was dispatched; a ship carried the plant-hunter to Calcutta, and his own good legs carried him to the Himalayas. Such are the opening chapters; we could have wished the subsequent ones were more appropriate to the title of the book; but he who wishes information on the botanical treasures of that quarter of the globe, need not look therein. Let him consult that most interesting work, "Notes of a Naturalist in Bengal—the Sikkim and Nepal Himalayas," by Doct. Hooker, son of Sir Wm. Hooker, the distinguished Curator of Kew Gardens.

Mr. Editor, perhaps some of your youthful readers (for I trust you have many such, whose tastes the *Horticulturist* is assisting to mould for future usefulness and pleasure), may not know we have had plant-hunters among us: men who would have derived greater joy from the discovery of an undescribed *Magnolia*, or even an humble moss, than did Captain Sutler and his associates, on the first discovery of gold in California! Probably the first, certainly the most distinguished of the early plant-hunters of America, was Bartram, who, about the year 1730, made collections of American plants for his English correspondents. He was perhaps the first Anglo-American who conceived the idea of establishing a Botanic Garden, and determined more undescribed plants than any of his cotemporaries in our country.

In 1773, the second botanical garden was established in this country, by Humphrey Marshall, another plant-hunter, whose residence was at the site of the present village of Marshallton, Chester county, Pa. His example was not without its influence; and in 1777, John Jackson commenced a highly interesting collection of plants at his residence in the same county.—*See Darlington.* In 1785, Humphrey Marshall published "*Arbustum Americanum*," believed to be the first botanical work written by an American, and published in this country; it is a rare book, of which a copy is preserved in the Philadelphia Library. In 1791, Bartram published his *Travels in the Carolinas, Georgia, and Florida*—an interesting account of that section, mainly valuable at the present day as a record of the past. Other plant-hunters now appeared in quick succession—some impelled solely by the love of science; others, by the double purpose of gratifying their thirst for knowledge, and gaining bread by the exportation of their collections to Europe. One of the most distinguished of the present century was F. André Michaux, who in 1810 published in France his "*History of the Forest Trees of North America*," and of which, Mr. Editor, it was your pleasant lot to superintend several American editions. The interesting biographical sketch of Michaux, recently published in the *Horticulturist*, has happily extended his name and fame. Preceding Michaux by a few years, was Kin, an eccentric German, of whom but little is recorded. He traversed on foot much of our then unexplored country, with bag on shoulder, *à la chiffonnier*, gathering as he journeyed whatever to his inquisitive eye seemed rare or beautiful. The collection of southern *Azalias*, which decorated the old Landreth Nurseries, was made by him, in return for some trivial aid extended his exchequer in an hour of need. Pursh followed, and for some time was gardener to Mr. Hamilton at the Woodlands. He was an educated, observant, German botanist, and in 1814 published in London "*Flora Americae Septentrionalis*," the most comprehensive work on American plants extant, though perhaps not

of the very highest authority. His name will pass to posterity among those of the early plant-hunters in the wilds of the New World. To him, it has been said, belongs the chief credit of a most useful practical work, "The American Gardener's Calendar," published in 1806 by Bernard McMahon, whose name it bears. Here we may digress to say, McMahon was in his way a plant-hunter and patron of science, so much so as to induce Nuttall to name the genus *Mahonia* in his honor. I was pleased to hear, Mr. Editor, that it is your intention to republish the memoir of him which you appended to the late edition of his work superintended by yourself.

John Lyon, a Scotchman—sprung from that staid and thrifty class of peasantry, whose sons have furnished so many bright examples in art, literature and science—succeeded Pursh, as the superintendent of the Woodlands, during its palmy days. Lyon ultimately relinquished the position to become a practical plant-hunter, with a view to their exportation to Europe. In that pursuit he made extensive journeys, preserving his accumulated gatherings at my father's nursery, until they amounted to a sufficiency to authorize a trip; thus he made alternate journeys of collection and voyages across the Atlantic. Mr. Editor, you well remember the *Magnolias*, *Halesias*, *Stuartias*, *Virgilias*, *Gordonias*, *Pinckneyas*, and other then rare native trees and shrubs, which decorated the old place—they were mainly the contributions of Mr. Lyon. In one of his tours of exploration, whilst in Tennessee, he was overtaken by a fever incident to that region, and died with strangers only to pay "the last sad offices." Such is the danger to which the plant-hunter is subject. Though then but a child, I recollect him well. He was, for years, when at Philadelphia, an inmate of my father's family, and at one period acted as an amateur tutor to the writer of this sketch. I judge he found it no "delightful task" to

"Teach his young ideas how to shoot."

Mr. Lyon was an amiable, well bred, intelligent man, of most sterling worth, and a loyal Briton. Well do I remember the contempt and incredulity with which he was wont to read in *Poulson's Daily Advertiser* the tidings of Buonaparte's Peninsular successes and his joy when he was despatched to Elba.

About this period came Whitlaw, whom no doubt, Mr. Editor, you distinctly remember; once seen and heard, his image could never be obliterated. His portly person, ruby face, and broad Scotch accent, with a tone of confident assurance which told of perfect self satisfaction, made an indelible impress on my youthful mind. Whitlaw delivered a weak course of lectures on botany, aided by a series of transparencies.

Shortly subsequent to Lyon came another plant-hunter, Thomas Nuttall. Though more than forty years ago, I distinctly remember the first time I saw him, standing beside my father, in the dusk of a summer's evening; a stranger, of quiet manner and careless toilet, presented a letter, which proved an introduction from Frazer, a botanist of some repute, who had been a plant-hunter in America. Nuttall had previously been in this country in the capacity of a journeyman printer. What first directed his attention to botany is unknown; he at that time knew nothing of plants; in his own words, not even "a *smilax* from a passion-flower," and actually mistook the former for the latter! Mr. Nuttall is so well remembered by Philadelphians, of botanical taste—indeed by all in every department of science—at least

of the generation which is daily lessening, that any description of him would be almost superfluous.

In 1818, he published his "Genera of American Plants," which it has been said, "gave a new impulse to botanical studies in this country." Nearly simultaneously therewith he delivered a highly successful course of lectures on botany at the old hall of the Academy of Natural Sciences in Arch street, at which I recollect seeing that able botanist, the Abbe Corr  a De Serra, the Portuguese Ambassador and Perpetual Secretary to the Academy of Sciences of Lisbon, himself a plant-hunter, and in whose honor was named the genus *Correa*. In 1821, Nuttall published "Travels in Arkansas," being notes of a journey in search of plants. Though the bent of his mind was to precise studies, he had descriptive and reflective powers of more than ordinary beauty, and had he cultivated literature as ardently as science, he would assuredly have reached distinction.

Nuttall's perseverance in the study of his favorite branch of science was ultimately rewarded by a Professorship at Cambridge, and no man could have worn his honors with greater modesty. He ultimately resigned his chair, and returned to England, having been made independent by the decease of a paternal uncle, who, to correct what he no doubt deemed his wandering habits, coupled the enjoyment of the estate with the condition that he should reside in England a fixed portion of each year, himself, poor man, innocently unconscious his nephew had immortalized the name of Nuttall. He still resides near Liverpool, and is just now devoted to Rhododendrons. These rambling sketches of plant-hunters might be more extended, they are already too long, yet I cannot close without referring to another, if, indeed, it be admissible thus publicly to mention one,

"Whose modesty is only equalled by his virtues."

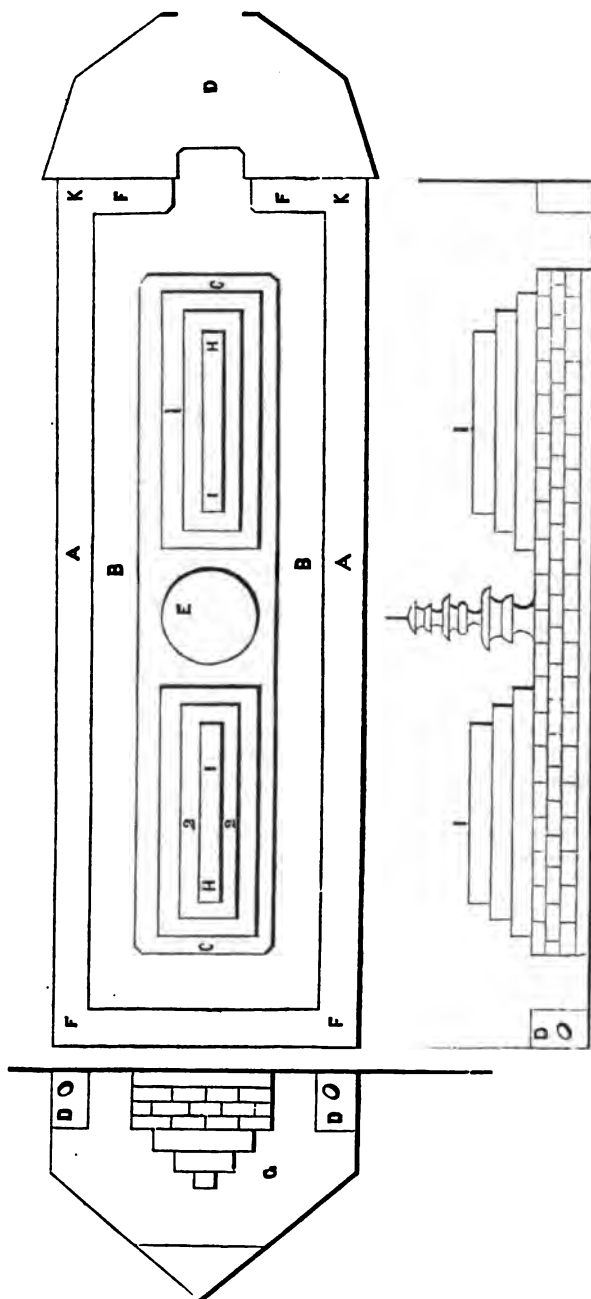
Doctor Darlington, of West Chester, author of "Flora Cestrica," and who, in his own quiet, unobtrusive way, has done much to advance botanical taste, and has conferred a further obligation on his countrymen by his charming book, "Memorials of Bartram and Marshall," to which, Mr. Editor, I beg you, once more, direct the attention of your readers; you can scarcely do them a greater service.

L.

PLAN OF AN ORCHIDEOUS HOUSE.

BY M. COLEMAN, MAMARONECK, WESTCHESTER CO., NEW YORK.

THERE are few tribes of plants so deserving the attention of amateurs as the Epiphytal species of Orchide  ; they are rich in every variety of color; some replete with aromatic perfumes, others emitting the most refreshing and delicate odors. Their flowers are mostly large, showy, and fantastic but all are interesting for their curious forms. They are of easy culture, bearing an incredible degree of heat or cold if applied at the proper season, and with due care is there one that ever saw those beautiful Cattleayas, elegant Oncidiums, curious Phal  nopsis, or showy Stanhopeas, but would wish to grace their collections with them? yet, strange to think, notwithstanding their many commendable qualities, how seldom even a solitary specimen is met with; this may be attributed to the fact that a specimen once procured



Scale, 10 feet to 1 inch.

PLAN OF AN ORCHIDEOUS HOUSE.

and submitted to the treatment of a general collection, will soon cease to exist. It should not be inferred from such failures that they are more difficult to cultivate than other plants, but it illustrates the fallacious notion which many entertain, that plants from all parts of the globe must do equally well in one house. To such an admixture the subject of this notice forms a grand exception; for to grow Orchideæ to perfection, they must have a house of their own, so arranged as to imitate as near as possible the seasons and atmosphere of their natural climate, as much anxiety and expense is obviated by a proper beginning.

I send the above plan and arrangement of a house which I found suited to their wants, for the benefit of those interested. It is a combination on a small scale of the best houses in England, by the author of "Centuary of Orchideæ," &c.

A, A, side shelves for plants, with tank and return pipe underneath; B, B, walks; C, C, plant stage; D, anteroom; E, fountain and aquarium; F, F, F, F, under the shelves are apartments for creepers. The stage is comprised of seven shelves, three on the sides and ends and one in the centre, sunk in pans half an inch deep in Yorkshire white flags; these pans are filled with clean round gravel, on which the pots are placed; when evaporation is required, the whole stage and walks, if needed, can be ingeniously overflowed in a few minutes from a tank on the roof of a garden shed which runs at right angles to the house at the end, G. This tank is supplied by a force-pump from a supply cistern, filled with rain water from the surrounding buildings; a pipe is carried from the tank, under the walk, and through the vault (under the arched shelves) to the fountain, with a tap at a convenient point, which turned at leisure, throws a constant stream and gives a genial and pleasant atmosphere; there is an overflow carrying the surplus water back again to the supply cistern.

There is also a brass stopper, fitted in the bottom of the pond, connected with a drain to carry off the water when necessary. Another pipe is brought from the tank, and under the walk is carried through the mason work and centre of the stage at H, and neatly laid along the centre of the pan, (the centre of this pan must be sufficiently deep that the pipe will not appear above the level of the shelf,) to I, the stage being divided by the pond. The pipe is here bent down and carried under the shelves, rises again at J, and is continued to the end. The holes in the pans must be cemented to prevent the escape of water; the pipe is perforated at twelve or fifteen inches apart, with a tap in a convenient place. The centre shelf must be water level; so must 2 and 2, &c., be on the same level; then the water flows equally to both sides. The side shelves are also of flag, with cast iron facing, supported by inch-thick iron bars, and made water tight with Roman cement. These are also covered with gravel, and can be watered with equal facility by branch-pipes from that which waters the stage.

At K, K, is a brass stopper to draw off the water when needed. Directly under those stoppers are hollow flags, with circular openings and drains connecting with that from the pond, which answer the double purpose of carrying off the surplus water from the shelves and from the walks when washing is needed. The walks are finished with Yorkshire flags; the side walls are five feet six inches high, having no upright glass; the sashes are single lights, and are fixed; (that is an objection which should be avoided, the tops should open in hot weather;) the ventilators are built in the side walls, one under each sash; there is also a ventilator in each gable end;

the only entrance is through the anteroom (this is only necessary for a detached house); it serves to prevent a rush of cold air as well as prolong the period of blooming by changing from a moist to a drier atmosphere; the flooring is the same as in the house, and a shelf around it, with brass swivels from the ceiling for hanging plants; there are four large windows, one on each side, hung in the ordinary way. The house has an east and west aspect; this, I believe, a great desideratum for all plant-houses, as the sun will have less power at noon, they being naturally shade-loving plants. A steep roof, fluted glass, and a judicious selection of creepers, will obviate much difficulty on this point.

NEW PLANTS OF 1857.

THE year which has passed away has been, as usual, prolific of novelties amongst plants cultivated as ornamental objects. It was, however, specially recorded, that two classes of plants, which appeal to the senses more by their beautiful forms than by their gaudy colors—by their elegant rather than their gorgeous beauty, have made great advances in popular estimation. The classes referred to are the Ferns and the Ornamental-foliaged Plants, including among the latter those with variegated leaves. We pass over these, however, to record briefly the novelties among flowering plants, which have attracted especial notice during 1857.

Among annuals, the most striking and useful addition which we have observed is *Lupinus Menziesii*, remarkable for its crowded, heavy spikes of deep yellow flowers. The *Veronica Syriaca*, too, though of a simpler character, should form pretty dwarf blue beds. A purple-leaved variety of *Oxalis stricta*, called *atropurpurea*, may be a useful dwarf plant for special purposes. Here we may also record the showy biennial *Campanula Bromeheadiana*, a remarkably fine double Canterbury Bell.

Perennials are more numerous. There is the *Farfugium grande*. *Delphinium formosum*, an English garden variety, is, perhaps, one of the richest and showiest perennials, producing freely its large intense azure flowers; producing them freely, too, the first year from the seed, if sown early and planted in congenial soil. In the French gardens has appeared a handsome double-flowered (so-called) variety of *Scabiosa atropurpurea*; and there also has re-appeared a beautiful dwarf *Dianthus*, with its crest of crimson white-eyed flowers, resting on a compact mass of deep green leaves; it is called *Dianthus pulcherrimus*. *Lobelia texensis* is a vigorous growing species, with scarlet flowers, numerous, but rather small, and is of half-hardy character. This latter remark applies to the fine Spanish *Salvia candelabra*, a tall suffruticose plant, with branching panicles of white and purple flowers. The French gardens have received from California *Tanacetum elegans*, with greyish Fern-like foliage. *Viola pedunculata* is a handsome dwarf plant, with yellow flowers, spotted behind. The last was the finest *Chrysanthemum* season ever known.

Among greenhouse plants, the finest, without doubt, is *Rhododendron Veitchii*, a dwarf habited species, with large white frilled flowers. Several good additions have been made to the Indian Azalias, but none strikingly superior to those already known. The double variety of *Camellia reticulata*, introduced by Mr. Fortune, has bloomed and proves to have a large, rich-colored flower, moderately filled with petals. *Monochætum ensiferum* is a

charming little Melastomaceous shrub, with Chironia-colored flowers, a greenhouse plant, certainly, but probably requiring a warm greenhouse. Some very pretty hybrid Bouvardias have been produced. One of the best of variegated plants is the new *Hydrangea japonica aureo-variegata*.

Achimenes amabilis is a fine stove plant, with white Foxglove-shaped flowers; and both that and *A. meteor*, which we have figured, and *A. splendens*, alias *Tapina*, a trailer, with brilliant scarlet flowers, are charming additions to this popular family. There are some very handsome new *Begonias*. *B. Griffithi* and *B. Rex* are dwarf kinds, with a zone of silvery grey on the upper surface of their foliage; *B. Heracleifolia nigricans* and *B. laciniata*, larger sorts, with dark or brown-purple variegations. The curious little *B. rosacea* has nearly circular flowers, and is altogether a neat plant. *Eucharis Amazonica* and *E. grandiflora*, of which the first is, perhaps, only a larger flowered variety, are stove herbaceous plants of the first class, bold in character, free blooming, and showy. *Gardenia citriodora*, a dwarf, cool stove evergreen, bears its fragrant white blossoms profusely. *Gesnera cinnabarina* is a fine novelty with the habit of *zebrina*, having richly colored foliage; and *G. densiflora*, a free blooming new species, with the habit of *oblongata*, both highly desirable additions to our gay stove plants. *Poitea vicifolia* is a slender, elegant Mimosa-like plant, with vermilion-colored long Papilionaceous flowers. *Thunbergia Harissi* and *T. laurifolia* are two noble stove climbers, producing pendant racemes of large pale blue flowers, the effect of which from the rafters of a hothouse must be very fine. *Tydea Eeckhauti* and *T. Ortegiesi* are showy hybrids, with the character of *Achimenes picta*, and of a rosy red.

There are but few important additions to the list of Orchids. *Aerides Wightianum* is a distinct and charming plant with apricot-colored flowers. *Angraecum sesquipedale* is a superb thing, Vanda-like in habit, with the largest flowers known in the family, pure white when expanded. *Cypripedium Fairieanum* and *C. hirsutissimum* are two distinct and handsome additions to the evergreen section of Lady's Slipper. *Lælia Brysnia* is very rich-looking; and finally *Trichopilia crispa* is a charming frilled-flowered dwarf epiphyte, near *T. coccinea*, but with the flowers crispy edged.—*London Florist*.

ON TRAINING AND STANDARD HONEYSUCKLES.

BY CLERICUS.

POSSESSED of such delightful fragrance and elegant climbing habit, this plant is universally admired. Possessed of sterling charms, it deserves to be cultivated in all gardens, and in every variety of form which its nature will allow. As it is exceedingly accommodating with regard to treatment, it is much to be regretted that, in most instances, it is merely grown in those artificial circumstances where a wall or a trellis, or something equally formal, is afforded for training it. Supported by a pole, so as to compose a pillar, it is hardly ever to be seen; pruned into a dwarf bush, and thus making a fine border shrub, still seldomer; trailing over rockwork or a rocky bank, I have never yet observed it; nor have I ever noticed it planted thickly as a bush, and forming entangled beds, nor growing amongst Ivy, nor planted extensively to twine round the stems of trees in shrubberies, nor covering bushes of Hawthorn or similar plants in the ruder parts of

pleasure-grounds ; nor, in more than two or three places, pruned to a standard of four or five feet high, and developing a large half-drooping head, which almost sweeps the lawn. And yet, for each and all of these objects, it is peculiarly well adapted, while such treatment, would in itself give a great and delightful variety to a flower-garden. A short sketch of all these methods may not be unacceptable.

Honeysuckles are not generally at all suitable for training on walls. They are chiefly twining plants, and require something to wind and cling around. The Etruscan and yellow-flowered kinds (*Caprifolium Etruscum* and *flavum*), with the evergreen sort (*C. sempervirens*), are, however, tolerably fitted for clothing low walls. But they will need much pruning in such situations, at first, to prevent the lower branches from becoming bare, and to induce them to throw out laterals freely. For trellises, of various descriptions, Honeysuckles are much more appropriate. They can be trained over these so as to have almost a natural appearance, and whether the trellis be in the form of an espalier, or an arch over a walk, or a covering to an arbor, or any small erection, they will only need tying to it by some of the main branches, while the other shoots can be wreathed into the trellis. Here, as in the last-named case, much pruning will be wanted for a time, to get the plants into a good lateral and flower-bearing condition. A pretty diversity in training Honeysuckles thus might be obtained by the use of poles, with chains or ropes hanging in a deep curve between them, so as to compose festoons. By fastening two or three main stems along these chains or ropes, and pruning them to give an abundance of laterals, very elegant festoons might be formed in a few years.

Supporting Honeysuckles by poles is much superior to the method of sustaining them by trellises, because more natural and better calculated to show the plants to advantage. Indeed, this is one of the best of all ways of managing them. The poles may be from six to ten feet high, and either single, or in threes joined together at the top, or in threes kept apart by cross-bars. Perhaps the single poles are the most beautiful. A specimen, planted at the base of one of these, may be tied to it, or suffered to twine round it ; and as it rises, the leading shoots should now and then be stopped, in order to force them into a lateral growth ; for the main beauty of a thing of this sort consists in having the entire pole well clothed with branches and blossoms. If the former are obtained, the latter are nearly sure to follow. Pruned so as to make a dwarf border shrub, the Honeysuckle will add a very agreeable feature to a shrubbery border. It has only to be efficiently cut down while young, and it will soon acquire the habit of making nothing but short blooming shoots ; or, should it occasionally send out a long rambling branch, such as it usually climbs with, this must be cut off at once, and its disposition to produce such shoots will in a very short time be checked. It can then be pruned every winter as an ordinary shrub, taking care to remove straggling shoots in the summer when they appear.

For trailing amongst rockwork, or over a rocky slope, Honeysuckles are exceedingly good ornaments. They have a natural propensity to trail ; and if the shoots are here and there plunged beneath a small mass of rock, or merely buried in the soil for a few inches of their length, they will thereby gain fresh vigor, and will not too much conceal the bolder outlines of the rockery. Pruning will be as useful in this case as in the others that we have mentioned ; for, by shortening the lateral shoots, they will be induced to grow in clusters, when the display of flowers will be more effective.

Nothing would make a more beautiful bed or mass on a lawn, or in some retired part of a pleasure-garden, than a group of the late-flowering common Honeysuckle. It should be planted about eighteen inches or two feet apart, treated like a low shrub, as already described under that head, and, after the plants have gained some size and strength, a few of the more spreading shoots may be allowed to grow into the other plants, and thus an interwoven mass will speedily be created, which will simply require a little pruning and regulating each winter.

What I mean by planting Honeysuckles amongst Ivy is, where Ivy is used for mantling a building, or a ruin, or rocks, or is permitted to overrun a small tree for the sake of picturesqueness, a few Honeysuckles, if trained up amidst it, would greatly improve and diversify its appearance.

The practice of letting Honeysuckles mount the stems of trees in plantations is pursued already in some gardens. It deserves, however, to be more frequently followed. The trees chosen for the purpose should be principally round the outside of shrubberies, because the Honeysuckle will flourish best where it can get air and light. A small number of trees may always be abandoned to such an object, even should the Honeysuckle strangle them, which it will not inevitably do. With care to keep the plants from being blown away from their support, they will not demand other attention.

Every one who has visited forest-like woods, must have been pleased with the aspect of Honeysuckles growing over bushes. To obtain these features in the rougher portions of pleasure-grounds is surely worth attempting; and this may be done by using bushes as supports. By planting the latter at the bottom of bushes that are three or four feet in height, it will, if left to itself, give a character of the most picturesque beauty in three or four years.

The plan of training it to a standard of from four to six feet high, is a mode to which I would afford some prominence, in connection with a very similar way of managing the common Ivy. As a companion plant to a standard Ivy, a standard Honeysuckle would be an extremely desirable object. They are both produced by the same means. Pruning to a single stem, and when this has gained the required height, stopping it, and producing a head of branches, is all the preparation needful; and a trifling subsequent pruning will carry the plants forward without further trouble. To establish a Honeysuckle as a standard, it should have a stake to uphold the main stem; and as it will be advisable to continue this after the head is formed, lest a strong current of wind should overset and break it, the stake should be an iron one, which will also contribute to neatness. The plant looks best on a lawn that is either flat or sloping, and the branches may, when the head is duly formed, be left almost to sweep the grass. If the plant be on a slope, the longest branches ought to be left on the lowest side, as this will create a greater elegance from the valley below. Perhaps the *C. periclymenum scrobinum*, or the late-flowering variety of the Woodbine, is most to be preferred for a standard. There is little choice necessary, however, as most of the *Caprifoliums* would answer the design, and *C. sempervirens* would probably be especially beautiful.

HEATING BY GAS.

THE greatest difficulty experienced by the residents in large towns who desire to cultivate plants on their balconies, or, as some say, who would wish to have Hanging Gardens, is to find some satisfactory manner of heating them. Common hot-water apparatus is much too powerful for such small places, to say nothing of cost, or the great difficulty of applying it; and when gas, the obvious substitute, has been employed the atmosphere has been rendered unfit for the respiration of plants. This has been so notoriously the case, notwithstanding many ingenious contrivances, some of which may be found described in former volumes of the *Gardeners' Chronicle*, that all idea of applying gas to greenhouses has for some time been abandoned. It appears however from the following account, for which we have to thank our very intelligent correspondent at Trentham, that the difficulty has been wholly overcome. This announcement is of such universal interest that we feel it a public duty to give the invention all the publicity in our power.

"Having occasion," he writes, "to pass through Edinburgh a short time since, I availed myself of the opportunity thus afforded of visiting Dalkeith, and among other things which particularly interested me was a method of heating living rooms and greenhouses by means of gas. The apparatus consisted of what may be called a heater or stove containing water, through which the air heated by a gas jet underneath the stove is carried by a pipe, coiling round and round in the water until it arrives at the top, from whence it is conveyed into the chimney. The warmth may be perceived the moment the gas is lighted, and can easily be regulated by means of a tap. There is not the slightest smell of gas perceptible, and an entire absence of dust or sulphurous smell as from coals. The cost of heating a large living room apparently about sixteen feet square and proportionately lofty, is I am informed only about threepence per day. The advantages of this plan in an economical point of view are undoubtedly great, and with regard to cleanliness I will merely remark that the lady of the house informed me it had been in use more than a year, and that she should feel very sorry were she obliged again to have recourse to coal fires, as there is no dust or dirt of any description from the gas apparatus, and when a room is not required the gas can be turned off in a moment without any fear of accident.

"The inventor and patentee, Mr. Thompson, of the Dalkeith Gardens, in whose house the trial was first made and with perfect success, explained the manner of fitting up the apparatus, and from his remarks and my own observations I have not the slightest doubt either of the efficiency of its heating powers or its cleanliness. The temperature of a greenhouse heated in this manner was 75° when I was shown into it, and the gas had then been turned off about half an hour. The stove stood on one side of the entrance, and from it a flow and return pipe two inches in diameter was carried round the house. It is however needless to attempt a further explanation of a system at once so simple and so effectual as to cause surprise that the same kind of thing has not been put in operation before.

"I understand that Messrs. Thomson and Sons, plumbers, of Dalkeith, are preparing to manufacture this apparatus in quantities, and I feel sure that when it has had time to become more generally known it cannot fail to be properly appreciated. Dwelling houses, small greenhouses, offices, warehouses, &c., particularly in towns or their vicinity, where gas can easily be obtained, may thus be thoroughly warmed at a very cheap rate. Portable

greenhouses also, in one of which I saw this method of heating in operation, may now be manufactured either for exportation or otherwise, with the gas stove and pipes complete.

"In every other plan of this description which has come under my notice there have always been complaints either of the gas escaping, or of the air of the place being burned or other ways rendered impure or deleterious ; but in this instance, owing to the small quantity of gas used, the low situation of the burners (on what would be the hearth of a common fire), and the effectual but simple manner of getting rid of the heated and impure air, these objections are entirely obviated."



FIG. 1.

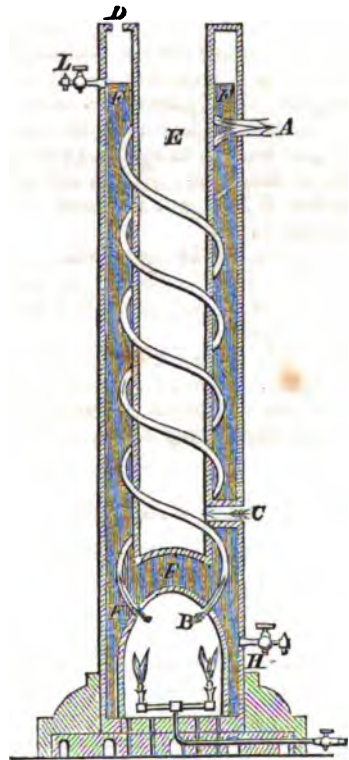


FIG. 2.

That some such contrivance as this had been used near Edinburgh we had previously heard, but in the face of so many former failures, we declined making any statement on the subject until satisfactory horticultural evidence could be obtained. This now appears to be sufficient.

Upon making inquiry concerning the apparatus in question, we find that it is the invention of Mr. Thomson, gardener to his Grace the Duke of Buccleuch, Dalkeith Park, who is also the inventor of "Thomson's Retort Boil-

ers," now coming into general use for heating forcing houses, &c. The apparatus is described as consisting of a zinc or copper column, containing from five to twenty gallons of water, having an inverted copper cone as a bottom, on which the jet or jets of gas play, and from which the heat ascends and exhausts itself in the water in a series of helical tubes, collecting into a larger tube at the top; by which means all unconsumed gas and noxious products of combustion are carried, either into a chimney, or through an aperture in the wall to the external air. Thus a large body of hot water is obtained, from which a perfectly pure and wholesome heat is radiated.

Another important point is that its management is as simple as lighting a common gas jet, requiring no regulation beyond turning down the gas when the temperature is rising too high.

The accompanying figures will further explain the nature of the contrivance :—

Fig. 1. represents the external appearance of one of the handsomer patterns; Fig. 2 a section common to all, the only differences among them consisting in decoration and size. The letters in the latter explain details, viz.—*A*, exit of hot air from gas burner to vent; *B*, entrance for hot air from gas burner to spiral tubes; *C*, entrance for cold air to expel heated air from chamber; *E*, hot air chamber; *D*, opening for the supplying water to boiler *F*; *G*, gas burners; *H*, aperture for emptying boiler; *L*, gauge for water level.

The price of the apparatus will necessarily vary with circumstances. A stove like Fig. 1 holding six gallons of water is 5*l*. 5*s*.; this we suppose is exclusive of fixing, &c. But upon such matters inquiry must be addressed to the makers.

The only probable source of failure that occurs to us at present is that the apparatus may be imperfectly constructed, in order to meet the exigencies of the numerous worshippers of low price, under the mistaken idea that they are sacrificing at the shrine of cheapness.—*London Gardeners' Chronicle*.

THE VERBENA.—SELECT LIST AND CULTURE.

BY JAMES S. NEGLEY, PITTSBURG, PENN.

THE Verbena has become so general a favorite, that a description of some of the best new varieties sent out the present Spring, and their culture, will no doubt prove acceptable to many of your readers. Rapid improvement has been made upon the Verbena within the last two seasons. The old type is entirely changed. We now possess every shade of color, and what has been so anxiously looked for by the florist, viz., large distinct eyes like the *Auricula*. The great difference in the habits of the Verbena adapts it as well for exhibition purposes as for the open ground.

To those who have the convenience and old plants, we would say that February is the best season for propagating by cuttings. Artificial heat is absolutely necessary for the purpose. The old plants should be forced into a vigorous growth and be syringed over once a day; this causes the young growths to develop roots on the stem below the leaves. The next thing to do is to prepare a well tempered hot-bed (if a regular propagating house is not at hand). Plenty of leaves or long straw should be mixed with the dung to make a lasting heat. When the fermenting materials are thoroughly mixed, shape the pile and put on it a one light frame made to fit the sash

closely. Inside the frame place six inches of old tan or saw dust on top of the manure ; make the surface smooth. When the heat is about 60°, get some pans or shallow boxes, fill them two inches deep with light soil, cover it with one inch of clean white sand, then make the cuttings of the young shoots on the old plants. Unlike most other cuttings, they need not be cut off close to a joint, but a portion of the stem may be left below the leaves. If the variety is scarce, one pair of leaves to a cutting is all that is necessary. Insert the cuttings in the sand, one inch apart, press the sand close to the base of the cuttings and give them a gentle watering. Then plunge the pans or boxes into the tan or sawdust ; shut up the frame and shade from bright sunshine. Water with a fine rosed watering-pot whenever the cuttings appear dry. Examine them every day, and remove all decaying leaves, which, if left, would soon destroy all the cuttings. With proper care, seven-eighths of the cuttings will be struck, i. e., rooted in twelve or fifteen days. They should then be inured gradually to the light and warm air. When "hardened off" pot them off, using three-inch pots, water and replace in a warm, close frame. As soon as the plants are established, they may be allowed an abundance of light and air. The leading branches must be pinched back occasionally to make the plants bushy. They may be planted out in the open ground towards the end of May.

CULTURE IN THE OPEN GROUND.—The soil in the beds should not be too rich ; if the plants grow rampant, they do not flower so finely or freely. Good strong loam, mixed with a little sand, and rotted cow manure is all that is required. The most pleasing and brilliant effect is produced by planting in masses or separate beds, using only one kind for each bed ; this set off by a neat edging of sweet Alyssum, Cuphea platycentra (kept trimmed close), or Lobelia ramosa. An occasional watering with liquid manure during the summer will prove of benefit.

VARIETIES.—The following list comprises a beautiful and distinct selection, one that will not fail to please the cultivator, especially if they have good taste :

Prince of Wales—bright ruby crimson, large lemon eyes.

Evening Star—intense carmine, large yellow eye, good habit, free bloomer, unsurpassed.

Celestial—pale, clear rose, immense truss, flowers freely ; superb.

Lady Palmerston—delicate blue, large white eye ; extra fine.

Geant des Batailles—brilliant scarlet crimson, dark velvet shading ; first rate bedding sort.

Victory—bright rosy lilac, large white eye ; much admired.

Mrs. Halford—waxy white, very large truss ; positively the best white in cultivation.

Brilliant de vaise—shaded crimson, close creeping habit.

Ellen Murdoch—pinkish rose, large yellow eye ; fine.

Imperatrice Elizabeth—violet rose, beautifully striped dwarf, compact habits ; elegant foliage.

Dr. Gross—large reddish crimson ; the most robust of all Verbenas.

Elizabeth Strange—white, with purple eye ; charming.

Madame Abt—deep indigo purple ; distinct and beautiful.

Admiral Dundas—crimson scarlet ; very showy.

Odorata perfecta—remarkably fragrant.

Glory of America—fine showy scarlet.

Joshua Robinson—beautifully mottled with purple and white.

Pet surpassed—bright rosy pink, dark eye; very fine.

Purple Perfection—fine dark maroon purple.

Dazzle—vivid scarlet crimson, very dwarf and profuse bloomer.

Sarah—the best striped.

PLUMS.

BY WILLIAM TOMPKINS, GERMANTOWN, NEW YORK.

For twenty years I have paid particular attention to the cultivation of the various kinds of fruit, and for a number of years have been a reader of the *Horticulturist*; and I honestly acknowledge that my most valuable information has been acquired by reading the experience of practical men as therein given. I therefore take this opportunity to tender my thanks to the present editor, his predecessors, and the numerous correspondents for the large amount of useful and interesting information which they have respectively furnished for the benefit of orchardists and others. Feeling it a duty incumbent on me to say something also, I present this humble offering of facts which have taken me many years to acquire, hoping they may prove useful and instructive to the inexperienced, if no one else. I do not presume that what is here offered will be applicable in all localities where this journal is read; for in most places where the white man has made a permanent home on this North American continent, there I believe it may be found working the good work for which it was originally designed. In a country of such great extent, I well know that no one sort of fruit or mode of culture will answer for the whole; and if anything I write should come in conflict with the honest opinions of others, they will please to remember that it was designed for this place and its vicinity.

Downing, in his "Fruits and Fruit Trees of America," page 265, says: "The surprising facility with which superior new varieties are raised, merely by ordinary reproduction from seed, in certain parts of the valley of the Hudson, as at Hudson, or near Albany, where the soil is quite clayey, and also the delicious flavor, and great productiveness, and health of the plum tree there, almost without care, while in adjacent districts of rich sandy land, it is a very uncertain bearer, are very convincing proofs of the great importance of a clay soil for this fruit." The above is strictly applicable to this place, to which, without doubt, the writer intended it to apply. The "facility" with which the plum is here grown would surprise those persons who, unfortunately, are not able to raise it without jarring the trees and catching the curculio. Really, Mr. Editor, if we could grow plums only in that way, I think their cultivation hereabout would soon be abandoned. A person with an orchard of several hundred trees would find it a tedious and an unprofitable business. There are several good-sized orchards in this place and vicinity that produce almost annually heavy crops without taking any measures to guard against the depredations of the curculio, or any extra care in pruning or cultivation. The largest and most productive orchards are on the ridge land, within one mile of the Hudson river. The soil is in some places a heavy loam, in others clay, and doubtless possesses the inorganic manures most congenial to the health and longevity of the plum, as there are in some orchards trees of remarkable size and age still enjoying good health and producing heavy crops. I have taken some pains to gather statistical information as to the amount of the crop, and am

really astonished at the result. Besides the orchards, there is not a farm yard, or garden that is not well stocked with them; even the humblest cottager has plums for sale. The crop of 1855 was greater than ever before, and it must have been very great throughout the State, as the market was so completely gorged with them as hardly to pay the expenses of picking and transportation; later in the season, when the bulk of them were gone, they sold better. These facts ought not to deter any one from planting or taking an interest in the culture of this fruit, as we may not have another crop like that in many years. Certainly they had not been so plenty and cheap in the New York market within the preceding ten years.

It is worthy of note that those trees that fruited to excess that year were much injured and some were killed. Two trees of a variety known as Sharp's Emperor, about seven years planted, were so densely loaded with fruit, that I was compelled to prop them up or they would have broken down with the weight. When the fruit was about half grown, these trees lost all their foliage, and soon after the plums began to drop with as much ease as ripe hickory-nuts, and in a few days they were all off. These trees have since died. Other trees of the same kind that fruited moderately, ripened well, and the last season were in a thriving condition, showing much fruit. Again, trees of the Bolmar that set as much fruit as the first mentioned, when pretty well advanced towards maturity, finding their stock of nutriment exhausted, cast about half of their fruit; the rest ripened well and attained good size. These trees are still alive and promise well. Experienced orchardists well know that excessive fruiting exhausts and weakens the wood-producing power of a tree, and should be guarded against if possible, although where one has extensive orchards, it seems to be too much trouble to thin by hand, and in this case the labor of the curculio should not be looked upon as unfriendly. Nature, or rather a kind Providence, has sent these industrious insects to thin the fruit. Sometimes they do it well, but oftener to excess. Were it not for this insect, we have good reason to believe that certain sorts of the apricot and plum would soon become extinct from excessive fruitfulness.

There is one variety of the plum, called the Yellow Egg, which is more highly valued and more extensively planted by those that know it than any other. It is a strong grower, very productive and rarely knots, qualities that are seldom combined in a single sort. It is mostly propagated from suckers, as we have it, root and branch, from the original. In England it is called an American plum, and no doubt it originated in the valley of the Hudson, as it has been cultivated here from time immemorial, growing with almost as much ease and facility as the willow. It also makes the very best of stocks, on which to work other plums that are difficult to grow on account of knotting or other constitutional defects. In sandy districts it is apt to drop the fruit before maturity, plainly showing the advantage of a clay soil for the plum. Downing has somewhere said, in giving advice to young planters, "Look around and see what varieties thrive best and are most productive in your immediate locality, and plant mostly of them." The above advice is truly valuable, and every planter should avail himself of it. Certainly more money has been realized from the sale of the Yellow Egg than from any other sort that is here raised. It is also longer lived and more reliable than most others.

The only really serious drawback to the cultivation of the plum is the knot. Some varieties are so much subject to it as to compel us entirely to

abandon their cultivation. Different opinions are entertained by orchardists as to the cause. Some attribute it to the sting of an insect, some to decayed plums coming in contact with the branches, and others to a constitutional defect. The latter is, no doubt, the true cause. Propagating from suckers taken from badly diseased trees, is believed also to increase and aggravate it. If suckers are used for stalks, they should by all means be taken from those varieties which never knot. Medical men say that it is an uncontroverted fact that certain diseases, from which mankind suffer, are hereditary, amongst which are consumption, scrofula, &c. Why may not the same rule hold good in the vegetable world? The writer believes that such is the case. Having frequently examined the knots when in the soft or incipient state, he has never been able to discover any insect or worm at that time; but when the knots become old and crack, there can sometimes be found a small worm about a quarter of an inch in length. Certain sorts of the plum have been subject to this disease for thirty years or more. I distinctly remember a fine orchard of the damson, that for many years was very healthy and productive. About the year 1825, the knots appeared in it, and in two or three years it was wholly destroyed. The true damson is a small blue plum, and remains on the tree till hard frost, frequently after the foliage is gone. It is now seldom seen.

A writer in one of the back numbers of the *Horticulturist* advanced the opinion that the knot was caused by decayed plums remaining on the trees, as he had frequently found the limb diseased directly underneath. If such be the case it is something new to us at least; nurserymen are well aware that seedlings which never fruited are frequently seen badly knotted. These facts ought to convince any one that decayed plums are not the true cause. "Is this disease contagious?" is a question often asked. It does seem to be so sometimes, for it has been frequently observed, in certain orchards, composed mostly of varieties which rarely knot, that a few knots suffered to remain for a few years, will seriously affect trees in close proximity. If, then, trees cannot be kept free of knots by cutting out the affected branches two or three times a year, they had better be taken out and burned.

Among the varieties tested by myself and others in this vicinity, the following may be relied on as seldom or never affected by the knots:

Coe's Golden Drop.
Yellow Egg.
Imperial Gage.
Roe's Autumn Gage.
Italian Prune.
Emerald Drop.

Bolmar.
Sharp's Emperor.
Downton Imperatrice.
White Damson.
York Egg.
Peach Plum.

The last named variety, a drawing and description of which may be found in the January number of the *Horticulturist* for 1855, is so valuable, that it should be found even in the smallest collection.

[It is certainly very pleasant to hear of a locality where the plum succeeds so well, and where the curculio is a blessing! There, is another district, now within reach of the markets of Philadelphia and New York, where the plum seems to thrive almost without cultivation; it is in lower Delaware, lately made accessible by a railroad. The quantity of this fine fruit brought from thence last year was astonishing. We shall thus be compelled to depend upon certain places for particular fruits, and grow in each situation what is found by experience to be its speciality.—Ed. H.]

HYBRIDISING THE GRAPE.

BY JOHN FISK ALLEN, SALEM, MASSACHUSETTS.

IN the April number of the *Horticulturist* is an article on hybridising the Grape Vine, by Wm. N. White. It refers particularly to the seedlings of Mr. Rogers of this place. Mr White says, "that if these vines produced (being true hybrids), and set their fruit well, and seed freely, it is remarkable; and should their fruit prove valuable, and they be brought into general cultivation, it will be the first instance of the kind in history, and I for one congratulate him on his success, if he has really succeeded."

These vines of Mr. Rogers, grown from seed of the native Fox Grapes, are true hybrids. They were alluded to in the report of the Fruit Committee of the Massachusetts Horticultural Society in 1856. The bunches are well formed, large and fine. Of the quality of the fruit I am not prepared to speak. If I gave any opinion, it would be that the fruit retained too much of the fox flavor, and more pulp than would suit the general taste. The specimens tasted were not fully ripe. Several years since Mr. Amos W. Stetson exhibited grapes grown from seed of the native, impregnated with Black Hamburg. The Curtis Grape was thus produced. It resembled the Isabella much in color and form of bunch, and is rather earlier.

I have been producing seedling grape vines for twenty years from the Eastern or European varieties, and find that the tendency is in many kinds to run back to the original; the fruit produced resembling the "Verdelho," the Madeira wine grape. The Black Hamburg usually reproduces itself. Of course there has not been any cross here.

I have three fine seedlings, one red, two black, where a cross is apparent, the foliage showing this. In a grape house where several sorts are in blossom at the same time, this may be effected by the bees or by the wind. This crossing is not so difficult as Mr. White imagines. It is often two or three days before the pollen falls from the anthers, and before this takes place the stigma may have been impregnated as above. Many kinds that set badly under glass, such as Muscat of Alexandria, drop the anthers entire without shedding the pollen; and again, the stigma in moist weather is often enveloped with moisture, so as to prevent fecundation until the pollen has fallen, giving an opportunity for foreign aid. With the natives the chance to impregnate is good, as the anthers are often close to the base of the embryo, and it would seem that the aid of bees was necessary for fruitfulness. This defect in the blossom appears to me the cause of the bad setting of the wild grape.

I have impregnated the Wild Grape, the Diana, and the Isabella with pollen of the European, saved in a tin box and kept dry several weeks before using. In the third edition of my "Culture of the Grape," at page 151, can be seen a representation of the bud and flower, and of the latter, deprived of the anthers. At the 149th page begins directions for raising new kinds of seed by hybridization. Here mention also is made of my hybrids raised from the Isabella. The idea of Mr. White, that hybrids could not be raised in this way was entertained by many prominent horticulturists at that time (1843 and '44). As the foliage of the seedlings developed, much curiosity was manifested by these persons in noting the evidence that the experiment was successful. A white early grape, a red or purple late grape, a round black and several oval late black grapes

were thus produced. No one acquainted with grape culture would doubt, after an inspection of the vines, that a cross had been effected. The foliage of the white grape more nearly resembles the native than does that of the others, and it is less subject to mildew. This vine I am now sending out to subscribers, that they may propagate it for sale, and thus disseminate it more rapidly than I could do. It does not root readily from cuttings, but it is readily increased by layers. It is very sweet, juicy and free from pulp. Seedlings of another generation from these grapes may fruit this year or the next, and the expectation seems reasonable that other good varieties may be produced. The Isabella is a perfect flowering grape, and usually reproduces itself from seed, when not impregnated artificially.

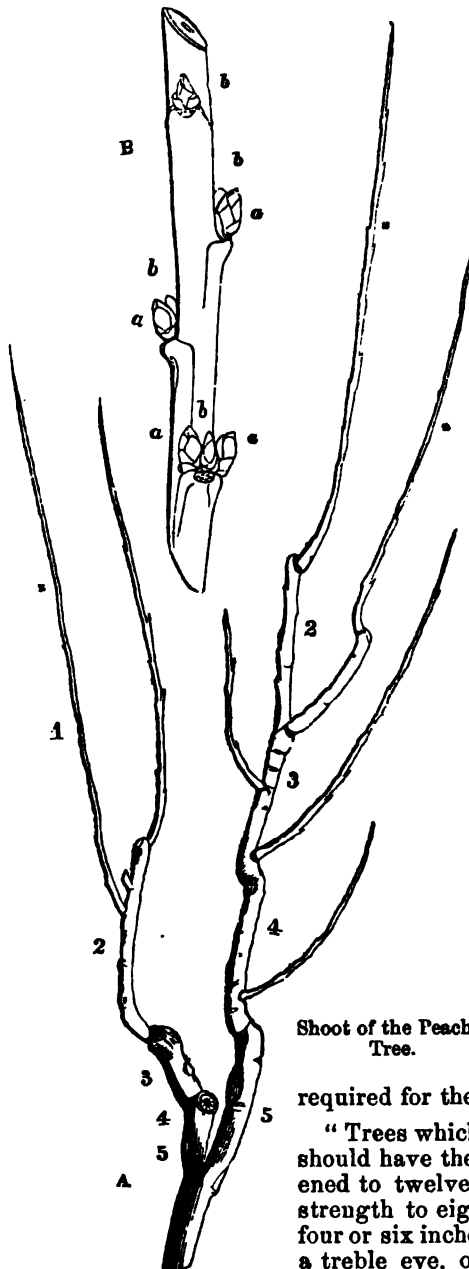
THE PRACTICE OF PRUNING ; THE PEACH.

FROM THE NEW EDITION OF LINDLEY'S THEORY OF HORTICULTURE.

THE mode of bearing is as follows :—A, represents the branch of a Peach tree. The figures 1, 2, 3, 4, 5, denote the respective ages of the portions of branch opposite. The asterisks at the sides of the shoots, indicate the place to which these may be shortened at the winter pruning. B, is a portion of a bearing shoot furnished with both wood and blossom-buds ; *a, a, a, a*, are blossom-buds ; *b, b, b, b*, wood-buds.

Peach and Nectarine trees bear their fruit exclusively on wood of the preceding summer's growth. For example, if one pull a Peach in the summer of 1847, it must be from wood formed in the summer of 1846, and which had no existence, as a shoot, in 1845, although then its origin might have been traced to a vital point within a bud. Such an almost invisible point was the shoot B, in 1845. In summer 1846, this point, developed from a bud, grew a shoot, furnished with leaves disposed singly, in twos or in threes, along the growing shoot. In the axil of each of these leaves, the rudiments of a bud were formed. The leaves, having accomplished their office, dropped in autumn, whilst the energy of the young buds continued to increase. Their winter appearance is represented in Fig. B. The blossom-buds are distinguished by their plumpness : they have an ovate form, which gradually becomes globose : they have a hoary appearance, owing to the scales opening and exposing their downy integuments. The wood-buds are slender and conical. Their scaly covering is less deranged by expansion of their interior parts in early spring, and consequently they exhibit less of that hoary pubescence by which the others are distinguished. In the case of triple buds the middle one is generally a wood-bud.

The Peach differs materially from the Pear and Apple trees. In these a shoot may be shortened to any bud, and the one immediately below the cut will almost invariably produce a shoot ; but the Peach shoot must be cut to where there is a wood-bud ; for if cut to a blossom-bud only, no shoot can result. Sometimes all the buds on a shoot are blossom-buds, except the terminal one, and one or two at the base. Such shoot must either be left its entire length, or cut back to the wood-bud at its base. The shoots of the Peach naturally terminate with a wood-bud. If this be cut off, the blossoms on the part left will expand and the fruit may set, but all will prematurely drop ; thus, if all the buds marked *b* were blossom-buds, they would expand ; but the eight blossoms would either drop without setting, or the fruit would



Shoot of the Peach Tree.

drop at the time of stoning ; at all events, a leafless, budless shoot would result, incapable of further vegetation. It dies downwards to the first wood-bud. The blossom-buds, *a* of B, will produce four Peaches, but one is enough to leave to come to perfection. From the wood-buds, *b*, shoots will proceed ; these, in the course of the summer, will form buds for future bearing ; and a twelve-month hence they will appear similar to those on B, which, having once borne fruit can do so no more, and therefore its place must be supplied by the most appropriate shoot it produces at or near its base, or by a shoot from an adjoining branch.

These facts are the foundation of all the long intricate plans for pruning and training this tree. The following are, I think, the best *concise* directions which have yet been given on this subject :

" Commencing with the winter pruning, the first rule to be laid down as a basis for all the rest, is to shorten every shoot in proportion to its strength, and to prune to where the wood is firm and well ripened : this will cause all the pithy and unripened wood to be removed, thence ensuring a supply of that which is better ripened for the ensuing year. But in order to give every facility to the ripening of this wood, it must be trained thin, not in profusion according to the general custom, but such shoots only as may be required for the following year.

" Trees which have arrived at a bearing state should have their strongest bearing shoots shortened to twelve or fourteen inches, those next in strength to eight or ten, and the weaker ones to four or six inches, pruning each to what is termed a treble eye, or that where there is a blossom-bud on each side of wood-bud : where branches are not in a bearing state, these treble eyes will not be found ; they must therefore be pruned to a wood-bud alone, which is always known by its sharp point.

"In May, the season for disbudding the tree, all foreright shoots, as well as those from the back, must be carefully removed with a sharp small-bladed knife, taking care to cut close to the branch, but not into the bark : a few, however, of those foreright shoots had better be cut within a quarter of an inch only, which will leave two or three leaves to each, to shade the young fruit, and such slight wounds in the branch as have been occasioned by cutting the shoots off close.

"As soon as the young shoots have grown long enough, the leading one from each branch should be nailed neatly to the wall, selecting one or two of the side shoots produced lower down the branch, and training them parallel also. This applies to those of the stronger branches, at and near the extremity of the tree. Those in the middle and near the bottom, will allow of but one shoot probably in addition to the leaders ; this will depend upon the space left in the winter pruning ; if sufficient, it is always better to have a young shoot on each side as well as the leader, than to have only one, for it is by this arrangement that a succession of young wood can be kept up throughout every part of the tree.

"Should young shoots, indicating extraordinary vigor, any where make their appearance, they should immediately be cut out, unless where a vacant part of the wall can be filled up, because an excess of vigor in one part of the tree cannot be supported without detriment to the other. Peach trees, when in a state of health and vigor, generally throw out laterals from their stronger shoots ; when this is the case, they should not be cut off close, but shortened to the last eye nearest the branch ; and if there is room, one or two of those first produced may be nailed to the wall ; or the middle shoot may be cut out, leaving the two lowest laterals, and allowing them to take its place ; thus frequently obtaining two fruit-bearing branches, when the former one would, in all probability, have been wholly unproductive of fruit the following year."

[The American reader will not fail to apply the theory to our climate ; here the "wall" part of the above instructions is rarely resorted to.—*Ed. H.*]

WISTARIA FRUTESCENS, VAR. MAGNIFICA.*

MORE than a hundred years before the introduction of the *Chinese*, Europe possessed the *North American Glycina*, now called *Wistaria Frutescens*. However, as frequently happens in such cases, the new comer has supplanted its predecessor, which it surpasses in the great development of its stems, in the astonishing profusion of its flowers, and in the size of its azure-colored clusters. To these advantages of its rival, the United States species can boast on its side of flowering on branches previously supplied with leaves, as well as of exhaling in the autumn an agreeable perfume. In other respects the resemblance is seen in the harmony of the general appearance, in the graceful drooping of the clusters, which are of a rich violet color.

This tint is succeeded in the variety *magnifica* by a lilac color, with a metallic sulphur-colored spot. Its clusters, instead of being pendent, grow horizontally ; the flowers, instead of being far apart, are very compact in the clusters, much more so than the picture represents them. This variety has

* See Frontispiece.

the great advantage of flowering profusely, whilst the other hardly shows its flowers. Its blooming anticipates also that of the type, it being in flower towards the end of June. It has been produced from seeds sown by M. Delaville, the elder, head of horticulture at the castle of Fitz James, near Claremont (Oise), owned by M. de Beaumini, from whom I obtained it.

His grafts are multiplied rapidly. The specimens delivered have been very hardy.

L. VAN HOUTTE, in *Flore des Serres*.

MAY I GIVE MY CONIFERS GUANO?

WHEN I am asked this question, my reply is, "Most certainly you may, with the best results." Indeed, there is hardly a plant (probably not one) to which this invaluable manure may not be applied beneficially, if the application is made with proper precaution and at the right time.

To discuss this subject fully would occupy much time and space, but I am desirous of recording a few practical results in direct reply to the question at the head of this article. The information will, I have no doubt, be of use to some readers, because it is yet believed by many that guano is detrimental to Coniferous as well as to numerous other plants.

Two or three years since, a gentleman who is a great lover of Conifers, determined to test the efficacy of guano as a stimulant to various specimens in his grounds. The rate of growth for the summer was carefully noted, as well as that of the following year, when no guano was given. The difference was very marked. Some of the plants assisted by the stimulant pushed shoots more than double the length of those made in the following year, when no guano was applied.

It will possibly be asked, What quantity was given to each plant and when? The application commenced as soon as vegetation became active, and was continued at intervals until the season's growth was completed, and it was given in a liquid form. To those who are novices in the use of guano, the following hints may be necessary:

Procure an old tub, a tar barrel is as good as anything, throw into it half a dozen pounds of the manure, fill up with water, and stir till the whole is dissolved. In a few days the liquid will have become perfectly clear. Take a portion of it, reduce with soft water to about the color of pale sherry, and it is fit for use. Apply it at intervals of about ten days. After two or three applications, if a plant is thoroughly healthy and vigorous, the manure may be given a little stronger than is recommended above, but take care never to err on the strong side of the question, or the worst results may follow; rather apply often and much diluted than give it too strong. I have seen vigorous plants, other than Conifers, killed by too strong a dose. Used judiciously, it is an invaluable assistant to the gardener, but, like all powerful agents, it requires to be used with caution.

I may mention a circumstance in which the frequent application of soap suds to a Deodar greatly accelerated its growth. The tree alluded to stood on a lawn in front of a gentleman's dressing-room window, and was one of several similar in size, planted at the same time. To the one in question, the owner, at frequent intervals during the spring and summer, was wont to carry the contents of his washing-basin, at first without any idea of accelerating its growth; but after the first year, witnessing the beauti-

ful effect of the application, he followed it up designedly. From thus constantly attending to and watching the growth of the tree, he became, as he assured me, quite attached to it, and never failed to point it out to his friends as the greatest favorite in his garden. It was worthy of all his admiration and attachment.

G. L., in *London Florist*.

AN EXAMPLE AND A BIT OF ADVICE.

No matter for the neighborhood of what city the following extract of a letter received this last Spring emanates; suffice it that it is genuine and only a portion of a history of an enthusiastic gentleman, still young, with all the appliances for happiness which education and wealth can command. It suggests an aspect of American life which it is pleasant to contemplate, and which is by no means rare in our country. He says: "On the first of April there was not a tree, nor shrub, nor apparent preparation for either on my place; even you, I think, will agree that I have been busy to have planted in one month some three thousand five hundred trees, among which I may mention, as giving the most immediate effect, over two hundred evergreens, mostly of the Norway Fir, of remarkably fine development of form, branching luxuriantly to the very ground. These plants are large for moving, but have abundant roots, and I superintended their transplanting from a neighboring nursery, exercising the utmost care in the preservation of the roots in a moist state, and in the preparation of the ground for their immediate planting.

"My business in the neighboring city prospered greatly, and heaven has blessed me far beyond my deservings. I now find myself kept pretty busy managing what I have earned. Taking the admonition of my father, who abandoned public life at an early day, I have never entered it, though solicited to do so, preferring the peace and independence of private life to the honors (?) and emoluments of office; I indulge no political aspirations, and keep aloof from politics. I love the country, and am actually *retiring* to it; though yet young, my thirtieth birth-day to be celebrated in the coming house-warming."

Our correspondent goes into other details of interest with regard to his intentions. He means to be fully *employed* in his retirement, and has sought to know what small fruits will be the least trouble and yet yield a fair return. Currants, by the acre, will yield a good profit, and they have the advantage over some others, that they hang, if required, a long time on the bush, and can thus be picked when opportunity offers. Again, in case they do not meet a full sale, from any cause, they can be made into wine. Cranberries are another of the long-keeping, small fruits to which his attention may be turned, especially as he describes some of the land assuited to their culture. The sale of Cranberries is not confined to a few weeks, but extends over the entire year—an advantage to be taken into account when deciding upon a kind for the principal crop.

Then we have known success to attend those who devoted their attention exclusively to one article, reminding us of Horace Walpole's story of the reply of a general to the inquiry, "Why, you must have a terrible time, always at work fighting?" "On the contrary," said the general, "we only fight four hours or so before dinner, and then we have all the rest of the day to ourselves!" By putting your acres mostly in Asparagus, when

near a city, very great returns are realized, and for most of the year it requires no cultivation whatever. The interval may be devoted to your fruits for home consumption, and to the ornamental around your dwelling; in other words, you can have the rest of the year to yourself. It may be that you do not choose to expend a very large part of your income in the purely ornamental, and, if so, it will be pleasant to think that all the money that comes out of the strong box for wages, &c., &c., went into it from the produce of the vegetable or fruit garden, be it Asparagus, Celery (this requires more labor than the former), or any of the small fruits.

If of the latter you decline the currant, select the raspberry; or if you can get the proper number of pickers at the proper time, and have a ready market, the strawberry is often very remunerative. Everybody's strawberries in the neighborhood, however, come in at the same time, and that time is rather brief; prices sometimes take a sad tumble just as your own lovely fruit is most tempting. Then strawberries have to be more or less carried, to their injury, to the consumer, and delay is fatal. With blackberries (cultivated), the season is a little longer, but they also must be carefully gathered at the proper moment, and likewise rapidly delivered; the raspberry and cherry somewhat the same. All will not select the currant; its advantages it is well to remember, however, and to have at least a fair portion of your ground occupied with the best kinds.

Returning to vegetables, we know of several instances where a speciality is selected with profit. Rhubarb cultivated by horse power has paid extremely well, and the owner has had "the rest of the year to himself." In whatever is undertaken, it is well to remember that success will depend on yourself. Get the best kind of what you intend to cultivate; see that it is adapted to your soil and climate, and, if possible, that it is always a *sure crop*; give it the right setting out, the proper exposure, shelter, (if it requires it), and the best manure. Economy in the latter will consist in not being *stingy*. This is your capital invested from which you are to reap your *cent. per cent.*, provided you understand your business yourself, and do not leave too much to assistants who take little interest in any of your proceedings, except the hope of pay-day coming.

You may have, when Jacob is sick, some time or other, to drive the wagon loaded with berries to the steamboat wharf or the railroad station; you must not be ashamed to do so, nor be too much enervated by leisure not to take a pleasure and pride in your success, no matter how much money you have risked in the bank or any other doubtful corporation. If you are not about to *attend to matters around you yourself*, it will be better to rent the land to somebody whose interest it will be to personally superintend every operation, and give yourself up to a small garden that you can look after from the library window; for we have never known the mere employment of hired labor to produce a fortune in small fruits and vegetables to the looker-on, who passed the morning with the newspaper or the classics, and the afternoon with "clever fellows" over a dozen bottles of costly foreign wines.

FOREIGN FRUITS.

GRADUALLY, as civilization develops itself, new resources spring up to cheer mankind on the journey of life. The fruit, formerly denied to northern climes, now finds its way where our grandparents had to be content with description only. Steamships, in one generation, have brought the products

of the tropics to our very most northern latitudes. Twenty years ago a stray sugar vessel from Cuba brought a few oranges, mostly spoiled on the voyage ; a rare bunch of bananas hung shivering without purchasers at a few of the confectioners' doors, and even in New York and Philadelphia the fruit of the West Indies was rare. The opening of California has now caused such an assemblage of steamships to pass the fruit-bearing islands, that oranges, bananas and pine-apples are accessible at cheap rates to all ; they penetrate by the way of New Orleans or the Atlantic ports every village of the Union, and we venture to say are eaten abundantly in Canada when the ground is covered with snow, and the rivers bound in icy fetters. On board the steamboats of the Mississippi, we found last season, fried bananas daily for breakfast, and the bar-keeper and steward were always ready with Havana oranges and pine-apples. These tropical luxuries reach us when our own fruits are becoming scarce, and disappear with the strawberry in June. They are a great boon to those in health, and particularly acceptable to the invalid. As commerce increases they will become more and more abundant, and as the demand for the North will be incredibly great where heretofore no sales could be made, a profitable opening for intelligent cultivators will be found at many points of our own coasts. At Key West, and the adjoining Keys, the Havana orange and the banana, as well as the cocoa-nut flourish as well as in Cuba. Our successors will be supplied from Florida with an abundance of wholesome fruit. In April, New York displays in her shop-windows melons and the finest fruits of the lands of the sun, and from her wharves they are shot off to every town connected by railways. Such is not the least blessing of the invention of the steam engine, which so happily brings distant lands together.

There was a pretty story told in London, when we were there last, to this effect. England is supplied with excellent oranges by steam from Portugal. A wealthy member of the Jewish fraternity, who wished to benefit the poorer portion of his race, obtained the monopoly of the trade by selling oranges, to Jews only, at first cost of importation, or even, if necessary, a trifle below it. His agents would sell to none but needy Israelites ; thus a good trade was insured to the profession, and the Londoners were content to purchase their Portuguese fruit from those who might otherwise have been mendicants, but for this liberal bounty of SIR MOSES MONTEFIORE. By employing a small capital in a perishable article, he gave employment to a large number of families ; many an urchin, who knew not his benefactor, has offered the fruit to Sir Moses in the streets, and as the story goes, he never refused to purchase at an advance what he himself had sold below cost.

THE WARFARE ON THE CURCULIO.

BY JOHN PHINN, ROCHESTER, NEW YORK.

HAVING been a diligent reader of the *Horticulturist* from its commencement (if not in point of time at least so far as the volumes themselves are concerned), I have watched with much interest the warfare carried on with the curculio, and the various devices contrived to kill the little Turk or drive him from his prey. As yet I believe we are without a sure and simple remedy ; but the following facts have been gathered from the records of past successes and defeats. The inference is my own.

1. No certain remedy has yet been found—one which will protect all the trees in an orchard or locality.

2. Some trees have been preserved and been loaded with fruit, while the crop upon others standing near them has been totally destroyed.

3. In such cases the preserved trees have generally been distinguished from the others by the application or vicinity of lime, sulphur, plaster, pigs, fowls, calves, manure, water, or some other agency offensive to the curculio.

4. The application of all these remedies often fails, and, where applied to a whole orchard or neighborhood, rarely does any good.

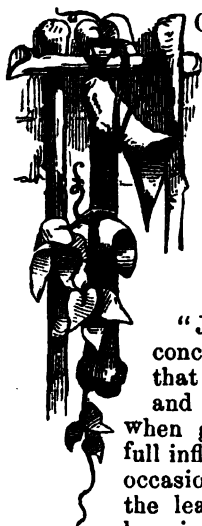
5. The curculio deposits several eggs in one fruit and one incision, and if fruit be scarce will make several incisions in the same fruit.

Connecting these facts together, it seems to me that the great secret of the success of comparative experiments with such remedies as lime, sulphur, plaster, &c., lies in the fact that the curculio prefers clean fruit and conditions favorable to the rearing of its progeny to the contrary; but it *will* try to rear them, let the conditions be what they may. If, then, we have an orchard of plums let us always leave a few of the poorest trees for the curculio and take our revenge on him after he has done his work by picking up and destroying the fruit and eggs. In a city it generally happens that some near neighbor is lazy enough to leave his crop in such a state as to protect ours; but if isolated, let us take care that we do not render all our fruit equally disgusting to our tormentor, for then he will assuredly levy his contributions from all trees alike.

But the curculio no doubt *prefers* clean fruit and a favorable location for propagating its species, and if we offer it these conditions it will rather make a second puncture in such fruit than go to that which is covered with lime, and under which chickens or pigs stand with open mouth to receive it.

Rochester, May 1st, 1858.

GRAPES RIPENING IN THE SHADE.



OR several seasons the best Isabella Grapes we have had, ripened thoroughly in a situation where they received no ray of sun till after twelve o'clock. In consequence of this absence of light for half the day, the vine is usually two weeks later in assuming its leaves than its fellows in the neighborhood, and yet the berries were larger, blacker, and more uniformly good and free from mildew. In their native places our wild grapes ascend trees, and there perfect themselves in much shade. Why should they not do so in gardens? &c. We submitted the question to two experienced persons and give their replies.

"J. JAY SMITH, Esq.—*Dear Sir*—With regard to your inquiry concerning grapes ripening in shade, I have always found that grapes ripen well, only when the foliage continues healthy and luxuriant until the fruit is ripe. It oftentimes occurs, when grapes are growing in a sheltered spot, but under the full influence of sun, that the foliage is covered with thrip, and occasionally red spider. These soon work a dreadful havoc on the leaves. The leaves dry up, are blown off, and the grapes hanging on the vines are perfectly exposed, the leaves being all fallen off except a few growing points. This is a *very common* occur-

rence, and where it is so, the half of the berries will be green, never ripening. On the other hand, when the vine happens to be trained in a rather shady position, the leaves are seldom destroyed by insects; consequently, the fruit has the full benefit of them, and ripens. I think, and I speak from observation, that grapes will ripen better when the plants are fully exposed, *provided* the foliage is kept in healthy and vigorous action, and plenty of it. I never practise *close* summer pruning on native grapes. I shorten the shoot about six eyes above the bunch, and allow all the *lateral* branches to remain, and cut out the branches when too thick. There is no doubt that our wine growers in the West have not yet practised the proper system of growing the vines; they keep them too small; prune too much. They should be allowed to extend yearly, until one vine covered a large space and inherited a *stem* or trunk where the sap would be more thoroughly elaborated. It has been frequently remarked that the best grapes are always found at extreme points of shoots, no matter how long these shoots may be. I am of opinion that the native grape will never be improved by crossing with the foreign. Our native grapes are all more or less subject to mildew, and any tinge of foreign blood would only increase that tendency. We must endeavor by cross impregnation and cultivation to improve our native varieties, without any admixture of the foreign element. I would expect more from an improvement on the foreign, such as the B. Hamburg crossed with Isabella, so as to impart a *lelle* of the foxy flavor, to give character and taste to the incipient sweetness of the foreign sorts. No doubt they would be improved by it. I have often spoken against the common practice of training the foreign grape up rafters, as it allows the fruit to *hang clear* of the foliage. In a grapery which I am now building, it is intended to form perpendicular trellises and keep the glass perfectly clear from foliage; the leaves shade and protect the fruit from the influences of the atmosphere. Those who have gathered strawberries, know that the finest flavored and best colored fruit is always hid among the foliage; but the foliage must have all the light and air that can be obtained.

"I would not expect to grow grapes to their greatest perfection by planting vines in shaded spots; but I would expect to find the best grapes where there is most foliage, just as you will find the largest potatoes where the haulm is strongest and healthiest.

"This is somewhat rambling—not so exact as an essay—but you will gather my views from it, on the subject you mentioned.

"Very respectfully, WILLIAM SAUNDERS, *Germanstown, Pa.*"

Mr. Samuel Miller, of Calmdale, writes thus:

"Some years ago, when the grape crop was a total failure in this whole region, I discovered a framework loaded with the most perfect Isabella and Catawbas I almost ever saw. At the sides of the poor arbor there was no fruit, but the level top was covered and densely shaded by a thick crop of leaves, while underneath, as if to hide from the sun, hung in splendid clusters the grapes above alluded to. Scarcely a ray of sunshine fell upon them the whole day, except when the wind parted the leaves. These grapes were highly colored, and very finely flavored. Shade usually ripens the sweetest currants, raspberries and grapes in their native state, but when there is deep trenching and high manuring it may be different.

"Respectfully,

SAMUEL MILLER."

EDITORS TABLE.

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, *Germantown, (Philadelphia,) Pa.* Packages by Express, &c, should be directed to the Editor, as above, by name ; they will thus reach him almost beyond a doubt.

JUNE.—We care not for the friendship of the man who does not revel in the delights of June. The merest tiller of the ground occasionally leans on his spade or his plough, to inhale the sweet breath of spring, delight his eye with the profusion of newly-developed beauties, and catch the cheering sound of the blue-bird or the twitter of the wren. The lilies of the field and the birds of heaven are pictures made for all, that by glancing at them the mind may be instructed, and necessary toil borne with patience.

The pursuits of the amateur gardener would be fruitless, indeed, if he were destitute of a delight thus conferred on all who gain a livelihood by the sweat of their brow ; he must, if he is a true lover of nature's gifts, also rejoice in the beauty of a scene, to ignore which would entitle him to no share in the smiles of June. He will not make his own garden the horizon of his landscape, but will look out on the grand scenery of nature, with its garments of varied green, enamelled with white, and rose-colored and purple jewels. What a queen is nature, and how silken are the bonds of her rule ! We read of the costly and dazzling magnificence of a regal drawing-room ; but what is this to the levee of mother earth. Such a drawing-room is nature now holding, with rainbow glories above her head, a thousand subject blossoms all around her, and a verdant and richly-jewelled carpet at her feet ; a poor imitation of which is the greatest triumph of the imperial loom.

In such open drawing-rooms the imagination of the poets of all ages have revelled, eschewing the stifling smoke of lamps, and the crowded saloons of mediocrity. It is sad indeed, when the inhabitants of a charming world have no perception of its charms, and can walk in the midst of beauties without observing them. But after being refreshed with this expanded acquaintance with the world's great garden, the amateur returns contented and pleased to his own limited domain, which yields him special pleasures in the season of growth. A large portion of the past months has been toilsome work, animated by hope rather than actual possession ; but now hope is to be realized and labor repaid. The strawberry graces its turban of soft green with profuse blossoms and fruit ; the fruit trees no longer look like barren sticks, but are garnished with beauty. The vegetables give expectations of a profusion of healthful food. Every day the soil has been broken by thousands of seedlings, either projecting a sharp spike or a minute branch. Warm showers exhibit their growth, and the hand of industry so lately reposing with all nature, scarcely knows where first to direct its efforts. Until lately the florist had to enter his greenhouse, or thrust his head into pits or frames to survey his treasures ; but now they are less cloy, and walk abroad in the unfettered parterre. What a source of delight it is to see the folded buds of the roses, and to catch a glimpse of the future

flower in the spindling branch of a carnation, or the rising stems of our bulbs! Every day brings forth new candidates for your approving smiles; until at length

"Along these blushing borders, bright with dew,
And in yon mingled wilderness of flowers,
Fair handed June unbosoms every grace."

DOUGLAS'S FIR.—On page 252 will be found a representation of this noble tree, *Abies Douglasii*, which has become a great favorite in England, and is gradually creeping into our Atlantic coast plantations, where it may be said to be hardy as far north at least as New York, and perhaps more northwardly. At Wodenethe, during the two late cold winters, though the foliage was touched the buds were uninjured. It forms a pyramid of deep verdure, which in all its dimensions may almost vie with the loftiest pyramids of art. Its vast arms spread out in wide circles often nearly from the ground; at other times they issue from the summit of a tall colossal shaft. In general, the conic outline is regularly preserved, and stage upon stage, the branches decreasing in length, finish by a preëminent tuft at a height which astonishes the beholder. Three hundred feet is said to be attained by this giant. Its branches are pendent, which imparts to it a light and graceful appearance. It is a rapid grower.

THE MOREL, or *Morchella esculenta*, which most people would, from its general appearance, be disposed to condemn as utterly poisonous, but which is perfectly delicious and better than a mushroom, was very abundant hereaway during the rainy weather of May; and was as nice a morsel as a woodcock to the educated gastronome. The following, from Loudon's *Encyclopædia of Plants*, may give some of our readers a hint that they will thank us for: "*Morchella*, a name altered by Dillenius from *Morchel*, the German name of the plant. Fungi of a large size, appearing in the spring upon the earth. The eatable morsel is one of the most valuable of fungi for purposes of cookery, but is more frequently used in a dry state for sauces, than when fresh. It is found in the greatest abundance in places where trees have been burned, which led in Germany to a practice of burning down masses of forests for the sake of the future Morels. This practice proved so injurious that it became necessary to suppress it by law. The Morel is subject to many variations of figure and color, which are all referable to four principal forms. But there are also some legitimate species which have been distinguished by modern botanists."

We do not advise the uninitiated to cook the Morel; but with a perfect knowledge of the fungus, a dish fit for the best people is provided at doors where it is despised and disregarded. It certainly is not of an attractive appearance in the ground.

THE ILLUSTRATED BOUQUET is a beautiful parlor-table book, published in London, by E. G. Henderson & Son, Nurserymen, and orders are taken for it by G. C. Thorburn, Newark, N. J., for \$10 a year, four numbers. The plants are finely drawn, grouped, and colored, and we can recommend it. The letter-press is useful.

NEW MAHONIAS.—One of our correspondents has received from Europe, eight new kinds of *Mahonia*; two of them are charged at \$25, the *Mahonia Bealii*. We shall thus soon have variety and a great choice in these beautiful plants.

EASTER BEURRE PEARS.—Some of our Boston friends have united to send us a box of admirably kept *Easter Beurrés*, which, on the 22d May, are as unshrivelled and fair as could be wished. Mr. Eben Wright, Corresponding Secretary of the Massachusetts Horticultural Society, at the request of the exhibitor, Mr. D. T. Curtis, forwarded the box, which, with its contents, came in the finest order. Mr. Curtis is the inventor of a process for the keeping and ripening of fruit, which, we believe, he has not yet communicated.

This fruit must have made quite a sensation at the opening exhibition on the 15th of May, which Mr. Wright and others have assured us was decidedly the most satisfactory in contributions, attendance, &c., of any opening fair this successful society has ever held. Mr. Wright

adds, "could you see in this vicinity avenues of pear trees on quince stocks in the grounds of Messrs. Hovey, Wilder, or Austin, to say nothing of a host of others, who might be honorably mentioned, as alike successful here, you would not feel the shudder which must have seized you on reading Mr. Allen's article on pears in the May number. Our horticultural community are justly proud of the eminent success which attends the culture of this fruit."

We have seen those avenues and greatly admired them, and hope yet to be convinced that the culture of the pear may be made highly remunerative in other places than Boston.

TRELLISES.—Small trellises over walks may be introduced with effect, by judicious taste. As to summer-houses and arbors generally, too much insipidity is scattered about the world in suburban gardens, under the vain pretence of ornament and use. The majority are like toll-houses or meat stalls, destitute of elegance, use, and expression of purpose. A summer-house need not be utterly hidden; but it ought not to stare us straight in the face from a back wall, its ugly lattice-work without one creeping tendrill, and its interior visible to every gazer, as if it were anything but a place of shade and rest. Though you never use it, it must appear fit for use or it is no ornament. It should be well shrouded with greenery, be easy of access, sufficiently inviting to attract a stranger, yet quiet in tone, and of a chaste, pleasing outline. Some suburban retreats have what are called "arbors," but which are a perversion of the name. The accompanying little sketch representing an arch covered with the Dutchman's pipe, *Aristolocia siphon*, is made of thick iron wire, and may safely be imitated.



HEATING BY GAS.—In the present number we give currency to an article, explained by cuts, on heating plant-cabinets, and houses, &c., by gas, with a view of inducing our American mechanics to look into the matter. There are many citizens who would gladly employ such an apparatus, and country gentlemen who manufacture their own gas; when they possess the apparatus all the extra gas wanted is made at a small additional cost.

In contriving such a gas stove, it must be remembered that common lighting gas is the most searching and deadly poison to plants, and it should never be risked to contaminate the air which they should breathe. No air from the house or room to be heated, should be admitted to the inside of the stove for fear of contamination by leakage; the air to sustain combustion should come from a cellar, an adjoining room, or from the outside through an underground drain or pipe, and it should be discharged when used, with the greatest care, that none escapes for the injury of the pores of the plants. The subject is an interesting one, both on account of its convenience and probable economy.

HEDGES.—Mr. Hovey says, in his May magazine: "It might be as well to advise all who wish to make a hedge speedily, to give up the task at once. It is utterly (in) vain to attempt any such thing. They are the work of time, and cannot be possessed by any who are not willing to patiently await their growth. With thorough preparation of the ground, good plants and planting, liberal manuring, and judicious clipping, a hedge may be grown five feet high in six or seven years—and not sooner."

PEA-WEEVIL, BRUCHUS PISI.—To destroy this, a correspondent of Mr. Hovey's says: "As soon as the peas are ripe enough to be gathered, let them be stripped from the pods, and dried carefully for a day or two in the sun. Then place them in a colander, and after covering them

with a plate, set the colander over a vessel of boiling water, until the steam has thoroughly passed among the peas. Then take them out, and spread them for a few minutes to dry, when they will be ready to put away. Thus every insect may be destroyed."

CATAWISSA RASPBERRY.—According to the same magazine, Mr. Pierce, of Washington, D. C., has raised this fruit in such quantities that he has sent to market to the extent of sixty quarts a day, through September up to the second of October. It is undoubtedly a valuable fruit, and we are expecting to hear of its improvement by hybridization soon.

GRAPE VINES.—We are following the fashion and collecting for experiment a rich list of the newer grape vines. Mr. J. Fisk Allen, of Salem, Mass., has obliged us by forwarding Allen's Hybrid, of which he says: "It is a fine, early white grape, equal to its male or pollen plant, the Chasselas of the French, and as they esteem this before all others in Paris, it is saying much in its praise. It is as early as any grape of any value, and has stood out this winter uninjured. No. 5 is a black hybrid; No. 8, a black or purple hybrid; all these are from the same lot of seed, and I have several others. No. 5 is a good grape, very like its mother, the Isabella, but the foliage is that of the *pollen* or European vine. No. 8 has a very beautiful leaf or shoot when first pushing, unlike any grape I know, but resembling that of the Red Chasselas Royal of the French; this latter had nothing to do with its origin however. It is more tender than the others and is quite late, equal to, or as late as, the Isabella." Allen's Hybrid is now being extensively propagated for sale. From Samuel Miller we acknowledge the receipt of Clapier, Wright's Isabella, Clara (Raab), Brincklé (Raab), Canby's August, Garrigues, Cassady, Kingessing, and Lehman, for all which favors we shall endeavor to return a true account in due season.

NATURAL OBJECTS.—To define the differences between the pleasures derivable from the works of nature and those of man, is a difficult subject. Natural objects are common and obvious, and are imbued with an habitual and universal interest, without being vulgar. Familiarity with them does not breed contempt, as it does in the works of man. They form an ideal class; their repeated impression on the mind, in as many different circumstances, grows up into a sentiment. The reason is, that we refer them generally and collectively to ourselves as links and mementos of our various being; whereas, we refer the works of art respectively to those by whom they are made, or to whom they belong. This distracts the mind in looking at them, and gives a petty and unpoetical character to what we feel relating to them.

A fine poet thus describes the effect of the sight of nature on his mind:

"The sounding cataract

Haunted me like a passion; the tall rock,
The mountain, and the deep and gloomy wood,
Their colors and their forms were then to me
An appetite, a feeling, and a love,
That had no need of a remoter charm
By thought supplied, or any interest
Unborrowed from the eye."

INSECTS.—Professor Asa Fitch says, in his new contributions to the Transactions in the New York Agricultural Society, "I sometimes think there is no kind of mischief going on in the world of nature around us, but that some insect is at the bottom of it. Certain it is that these little creatures, seemingly so insignificant and powerless as to be unworthy of a moment's notice from anybody but the curious, occupy a most important rank in the scale of creation, and on every side of us their performances are producing most important results, tending probably in an equal degree to our benefit in one direction, as to our detriment in another." It is impossible to over-estimate the value of these contributions to science, when we reflect that it is computed that all the species of insects taken together which exist in nature, do not fall short of four hundred thousand!

RHODODENDRON, AND APPLES.—Mr. Van Buren, of Clarksville, Georgia, writes that he now thinks Mr. McDowell's Rhododendron, figured by us in 1856, is the Catawbiense. "It grows," he says, "so much more luxuriantly, and is so much more brilliantly colored in its native haunts, that it led many botanists, as well as myself, to suppose it to be a distinct variety. I find by transplanting it, that it loses much of its brilliancy of coloring in the course of a year or two."

Mr. Van Buren thinks there will be a fine fruit season in Georgia, and adds, "A few days ago, I received a letter from a correspondent in Iowa, who informs me that our Red June and Aromatic Carolina apples have passed uninjured through three or four past winters, while many of the northern varieties were killed. I suppose that our varieties are of more recent origin, and have not become enfeebled by a repetition of grafting and re-grafting. Had the trees been raised at the South, I would then have said that the wood ripened more thoroughly than those raised at the North; the trees alluded to, I think, were grafted in Iowa."

STRAWBERRIES.—This month ushers in our first, and to many, the most attractive fruit of this latitude. Discussions will be frequent as to the merits of the various kinds, and we hope



BURR'S NEW PINE.



HOVEY'S SEEDLING.

to give next month a little experience from our own "experimental garden," in addition to the remarks of a practical man engaged in supplying the New York market.



LARGE EARLY SCARLET.



WALKER'S SEEDLING.

The two favorites with many, are Burr's New Pine and Hovey's Seedling, of which we happen to have the above portraits made in the season. But there are many other favorites,

such as Large Early Scarlet, Walker's Seedling, Marylandica, Germantown Seedling, &c., &c., &c. Longworth's Prolific, Genesee, Wilson's, Peabody's Seedling, and various others which will come in for review.

GRAPES—J. J. SMITH, ESQ.—I am delighted to see the deep interest manifested in the culture of the grape, and believing every little ray of light thrown upon the subject will be thankfully received, will give a few observations, which the last *excellent* number of the *Horticulturist* brought to my mind. In 1850, I took a tour through the western portion of Berks Co., where there was in all perhaps fifty acres of grapes (Catawba and Isabella) in bearing. Nearly all were affected more or less by the rot, some totally ruined, others half a crop, and some so badly injured as not to be worth gathering. One lot of perhaps half an acre was free from the disease, had a fine crop, and very nearly ripe. I had noticed all the rest of the vineyards which I visited were kept in neat order; no weeds; had been carefully pruned in the spring and as carefully tied to stakes. But this one, in which no knife, cultivator, hoe, or anything else had been used that year, the grapes which I bought a week or ten days after at \$40 per ton, proved not quite so well ripened as they should have been, but were infinitely superior to others that had received great care and attention. Do we not sometimes work and trim too much? Last autumn in looking at a friend's vines, his Isabellas were a perfect failure, except one single vine, on the same trellis with the others, had a proud load of splendid grapes upon it. This vine, said my friend (it being at one end of the trellis), I forgot to prune in the spring; hence the grapes. Such results tell a tale which ought to make a knife blush. Ten years ago I was in Sinclair & Corse's establishment, near Baltimore, and there for the first time tasted native grape wine (and I would wish nothing better); I asked them how they treated their vines. Come and see was the reply. Their vines were trained on trellises some eight or ten feet high, the ground thickly covered with fresh leaves. In the spring when the frost is out and the ground dried off pretty well, they rake off the leaves, give a top dressing of manure, and I think dig it in slightly, then cover on the leaves again, and what waste there was in a year's decay supplied from the forest. That is all, besides pruning and picking fruit. Isabellas were the principal stock. And now I will ask a few questions which will no doubt get me into difficulties, but I will venture on it. Where does the exact point end, of foxiness or fragrance, and aroma commence? I love the smell of a rank fox-grape, and if a good variety, can eat them when in the forest and have nothing better. I have eaten Black Hamburghs, Golden Chassellas, St. Peters, Muscats of Alexandria, and have a fancy that I can appreciate them; but how many of us poor fellows can afford to have them? So we must strike for Delaware, Rebecca, Cassady, Emily, &c., varieties, which I do hope will last as good as they have commenced, and which are only a little behind the foreign sorts in quality, but vastly lacking in size. A second question is, Must we trench two and three feet deep to obtain the finest grapes, and to have the vines last? If so, why do not our old residents of the forest run their roots deep down, instead of creeping (as a sailor would say) between wind and water; or, in other words, close to the surface under the leaves? And why do young vines that have been set out in May, in a bed only a foot wide, trenched and manured a foot deep, run their little roots two feet out into the common soil not over three inches from the surface? And why did my border, five feet wide and three feet deep, filled up with leather shavings, old mortar, leaves, cow dung, &c., &c., keep their three year old roots in its fertile bosom, instead of their sneaking off ten feet and netting themselves under an old hot-bed, when they had but one inch of good soil on a hard, yellow clay, to pass through, to get over the path, and that path three feet wide and considerably used? These things puzzle me considerably, and suggest that a little less trenching would answer as well; less trimming, and a great deal of mulching would pay well. I mean to try it the coming season at all events. I hope some one will answer my queries, and greatly oblige an old subscriber.

S. MILLER.

Calmdale, Lebanon Co., Pa.

ROBINS IN RHODE ISLAND.—MR. EDITOR,—Rhode Island is one of the breeding-places of the robin, and so numerous are they here, that we are obliged to cover our cherry trees and raspberry bushes with nets, if we expect any fruit. My own lawn is very frequently mowed; this gives the birds a fine opportunity to procure the earth-worms, which in moist mornings come near the surface. I have counted twenty pairs following the lawn-mower; and this morning was witness to a contest which gave great delight to my little children. A robin had seized an old worm which had the proportions almost of a snake, and found him disposed for battle. The bird, however, was determined on conquest, and at it they went; we witnessed at least twenty hard tugs both ways; one moment the head of the robin was depressed to the level of the cut grass; again up it went, then again down, and the see-saw was becoming deeply interesting; at every tug a portion of the worm was seen and then lost to view. At length the worm parted, and the robin flew off, no doubt delighted to be released from a *drawn* battle field. We ran to the spot, made a cut with a spade, and withdrew the remaining portion of the enormous worm from the earth, severed probably amid-ships, or in a state the sailors call half-and-half. CLIO.

CUPHEA EMINENS.—ED. HORTICULTURIST,—In your April number, I notice a correspondent asks information in relation to the usefulness of this plant for winter-blooming.

The writer also quotes the opinion of the Flower Committee of the Massachusetts Horticultural Society on the subject, and then indulges in a few remarks upon the exhibition of poorly grown specimen plants. The *Canna Warscewickzii* is next mentioned, and then follows an editorial note to this effect: "The flower is a glorious, deep crimson, and a valuable plant both for leaf and bloom." Which; the cuphea or canna? This description would apply justly to the latter, which is truly an acquisition both for the beauty of its foliage and blossoms and is an ornament to the greenhouse; but not at all to the former, which not only fails to answer the description in color, but is of very questionable beauty and value.

I cannot think you would for a moment recommend a plant so utterly worthless as the *Cuphea Eminens*. The opinion of the Flower Committee of the Massachusetts Horticultural Society, was by no means hastily formed, or given without due care and attention to all facts.

This Committee consists of seven amateurs, or professed florists, and no expression of opinion is ever made public in a report without first being endorsed by the whole Committee and then sanctioned by the whole Society at some regular meeting; so that any recommendation or condemnation of a plant is very likely to be correct. In the present case there was not a word said in favor of *Cuphea Eminens*—all joined in denouncing it; and "utterly worthless" is by no means too much to say.

It may, however, be urged that at the time of the Committee's report, we had only seen it as a bedding plant. Since the publication of the April number of the *Horticulturist*, I have made inquiries of most of our gardeners as to its qualities as a winter-blooming plant, and all say, that though treated with every attention, it *has never shown a flower*, and express their determination to discard it entirely. The florist who first introduced it into our vicinity from Europe, has expressed to me his regret at having unwittingly deceived the public in such a gross manner, as he trusted to the English description, and had never bloomed the plant himself. I might say much more, but think the above is a fair exposition of the opinion of all Boston florists.

E. S. RAND,

Boston, April 1, 1858.

Chairman of Flower Committee, Mass. Hort. Society.

EVERGREENS AGAIN.—MR. EDITOR,—Will you allow me a corner of your Editor's Table, on which to lay still another "word" for evergreens, provided the word be short? I feel honored by the notice Mr. Sargent has taken of my essay. He has laid the republic of American planters under great obligations, by his extensive and careful experiments with the newer trees, both deciduous and evergreen; and his opinion on the subject in question deserves the greatest deference. Yet, is it not possible for him to mistake in his judgment of the hardness of trees in other soils and climates than his own? All horticulturists know that the distance of

a hundred miles north or south, makes a wonderful difference in the hardihood of trees and plants. Not a few choice ornamental trees and shrubs, hardy at Rochester and Newburgh, are hopelessly tender in Oneida County. In the town where I reside, the Isabella grape generally ripens; in a village only nine miles distant, but several hundred feet higher, it never matures. Is it not, therefore, quite possible that some evergreens, "perfectly hardy" at Fishkill Landing, may not be so throughout Central New York, for which region alone I ventured to speak.

A word or two now in detail. Mr. Sargent misapprehends my remarks in reference to *Pinus ponderosa*. I did not represent it as tender, but simply compared its color and general habits with those of the Austrian pine, and said it bade fair to excel the foreigner, "but had not yet been fully tested." Of its hardiness I could not doubt, a specimen in my own grounds having passed through several winters without the slightest injury.

And so of several other pines. The reader of the first "word" must have seen that due honor was therein paid to *Pinus Cembra*, *P. Laricio* and *P. Pumilio*, though mentioned by their popular, instead of their scientific names. As to *Pinus Excelsa*, the fact still remains—I grieve to say—that, by the testimony of many witnesses, it is *not* hardy in this portion of Central New York. The wrecks of several fine specimens may be seen hereabouts, any day.

As to the heresy of making *Picea Pichta* synonymous with the Cracovian juniper, the printer must bear the responsibility of that. The brackets were not mine.

In "feeding" evergreens, there may, undoubtedly, be mistaken pains. A tree whose vigor is at all questionable, should not be stimulated into a succulent growth. But in the article reviewed by Mr. Sargent, the writer was professedly speaking only of hardy trees. Nor in the case even of these, is it desirable to induce a rank growth: their beauty is seriously impaired thereby. But there is so great a difference on the score of looks, between an evergreen standing in cold, wet, clayey ground, and one thriving in a warm and kindly soil, that I do not, after all, think it was far from wisdom to advise people (the majority of whom are so apt, from sheer laziness, to let their trees "go to grass") to "feed them with generous food, that they may make a vigorous growth, and always wear the bright hues of health."

In conclusion, allow me to say that seldom have I spent a pleasanter day than one passed, a few summers ago, among the evergreens, hardy and tender, at Wodenethe.

Clinton, New York.

Respectfully yours, A. D. G.

JOHN JAY SMITH, Esq.—MY DEAR SIR,—L. F. Allen speaks pear knowledge for the Buffalo region very truly, no doubt, but not for Southern Ohio. With us they do much better. Last year I got four dollars the bushel for Bartlett, White Doyenne, Dearborn's Seedling, Seckle, Louise Bonne de Jersey, &c., and three dollars for Burgamote; and had some twenty bushels from a few young standard trees just beginning to bear fair crops; from a young dwarf Bartlett, about three pecks; other dwarfs, a peck. I think with us here, pear-culture will pay.

Cincinnati.

CATALOGUES.—The season of catalogue-issues for the spring is over; we have but one to chronicle the present month, that of Thomas E. Cook & Sons, of Pleasant Ridge Nurseries, near Bendersville, Adams County, Penn., who have an extensive assortment of trees, plants, and shrubs, which we trust are extensively patronized, as they deserve to be.

HORTICULTURAL AND AGRICULTURAL SOCIETIES.

HARTFORD COUNTY (CONN.) HORTICULTURAL SOCIETY.—President, Gurdon W. Russell, M.D. Vice-Presidents, J. S. Butler, M.D., H. W. Terry, Hartford; Henry Mygatt, Farmington; Wm. F. Comstock, East Hartford; N. W. Stanley, New Britain; Norman Porter, Berlin; Sheldon Moore, Kensington; Salmon Lyman, Manchester; E. A. Holcomb, Granby; H. A. Grant, M.D., Enfield; S. D. Case, Canton; T. C. Austin, Suffield; Howard S. Collins, Col-

linsville; B. F. Seward, Southington. Corresponding Secretary, Thomas R. Dutton. Recording Secretary, Mason C. Weld. Treasurer, P. D. Stillman. Auditor, Seth H. Clark.

THE RHODE ISLAND HORTICULTURAL SOCIETY have sent in their list of premiums for the exhibition in June.

OFFICIAL REPORT OF THE CALIFORNIA STATE AGRICULTURAL SOCIETY'S FOURTH ANNUAL FAIR.—California is not unjustly called the Italy of the United States. The difficulty lies in the enormous distance between this great producing State and the older portions of the Union. It is almost impossible that we at the East should ever derive much advantage from her superior fruit region, unless it be in the way of wine or preserves. Notwithstanding this, we look with deep interest upon the facts set forth by their societies, and are not a little astonished at the transformation which the sudden influx of American mind and American industry has caused in the aspect of nature. The Report affords matter for thought, and for extended extracts had we the space at command. Lacking that, we can give but a hasty synopsis of the most wonderful doings which it has been our good fortune to chronicle.

At A. P. Smith's, near Sacramento, the Visiting Committee found one set of men gathering mature vegetables for market, while another was cultivating those half grown, and still another planting seed of the same sort. Mr. Smith sends cucumbers to market on the first of January. Mr. John Wolfkill sold last year, from six apricot trees, two thousand pounds, at seventy-five cents per pound. One of his fig trees, six years old, measures two feet four inches in circumference, and is thirty feet high. One hundred miles from Stockton, the Messrs. Thompson, the pioneers of fruit culture in the State, have an orchard, nursery, and vineyard of 165 acres, handsomely fenced in and partly surrounded by wide double avenues four miles in length, lined on either side by fruit and ornamental trees, affording shelter and a fine park-like drive. Almost everything seems to thrive, from hops, pea-nuts, and tobacco, to the evergreen oak; but it is noticeable that irrigation* has to be resorted to, and we remark that it is believed the gold-diggers are preparing the lands for future use, in a most satisfactory manner by thorough draining.

A Mr. Haraszthy has 280 varieties of grapes, and expected to make 10,000 gallons of wine last season, and we note, but cannot particularize, greatly increased enthusiasm in regard to grape-culture and wine-making; there are now over three millions of grape vines in the State!

In the vicinity of Petaluma, are more than 130 large dairies; the sales last year of butter, cheese and poultry, exceeded 600,000 dollars. Honey is of the finest quality; price per pound, fifty cents; price of swarms in hive, one hundred dollars! A Mr. Fallon has four old pear-trees planted by the Spaniards sixty years ago, and grafted in 1854 with the Bartlett, producing 3,000 pounds the past season, which sold for six hundred dollars! Think of that Mr. Allen! one hundred and fifty dollars a tree. The figures are all large; Mr. George Lee has five and a-half acres containing 1,000 orange trees; he has also the pine apple, banana, citron, lemon, coffee, nine varieties of acacia, and many other tropical fruits and shrubs, all healthy and vigorous; and besides, his orchard has an amount of peach, plum, and cherry trees, and strawberries which perfectly bewilder us.

The Messrs. Sanseovaine Brothers have 53,000 vines, and expected to make 80,000 gallons of wine last year; their eight large cellars filled with wine and brandy, present an astonishing picture of rapid wealth. But we must hold, and with a single extract to be digested by the northern man, leave this fascinating landscape: "The agriculturist and horticulturist from sterile New England, who lives one-third of the year in a snow-bank and the balance in hard toil to rid his fields of trees, stumps and stones, here has nothing to do but to turn the furrow, plant his seed, and in due time a sure and abundant crop follows. A climate, too, for evenness

* A mode of irrigation is thus described: "The water is raised into a tank and distributed through the garden by means of a red-wood flume under the earth. There are pieces of lead pipe extending from the flume about two inches above the earth at every tree. These pipes are capped and a small hole pierced in the top; on turning the faucet that lets the water into the flume, each pipe throws a jet about six feet in height, making a very pleasant sight and acting on the trees and plants like a rain-shower.

of temperature, health, and salubrity unsurpassed. The adaptability of these valleys and hill-sides (Sierra Nevada) for fruit-growing, is just being discovered. The monstrous pears, apples, peaches, and plums, raised the past season, surpass all others grown in the State. * * They undoubtedly will turn the present Mediterranean fleet of 643 vessels which annually leave for the Atlantic ports loaded with figs, lemons, limes, oranges, products of the vine, almonds, currants and raisins, to the amount of seven and a-quarter millions, to Californian shores."

THE NEW YORK STATE AGRICULTURAL SOCIETY has issued its list of premiums and regulations for the 18th Annual Exhibition to be held at Syracuse, October 5th to 8th, 1858. It is an extremely satisfactory list both for the exhibitor and the public. We desire to call attention particularly to the following new features, which appear to mark progress, and which will serve for a model for imitation. In addition to liberal gifts for all kinds of excellence, there is a premium of \$250, (gold medal or money,) for an approved work of about 100 pages on the edible fishes of the State, which are susceptible of *domestication and cultivation*, including migratory kinds. This is a most important movement, and deserves the thanks of every citizen. \$100 are also appropriated for an approved article on "The Quantity, Conditions, and Economy of the Nitrogen of Soils;" \$250 is offered for a Steam Engine, or other Steam Apparatus that shall successfully introduce cultivation by steam; experiments with wheat, &c., &c., are to be rewarded according to a judicious plan; and in addition, there is a "Discretionary Department," for "improvements useful to the farmer, and having valuable properties, articles of ingenuity, usefulness and merit." Here is food for reflection, and much that may be taken up by other societies to advantage. Progress is indeed the word; what the country will become when it is "all fenced in," and the politicians are penned up at home, it would not be safe to prophecy.

WISCONSIN FRUIT GROWER'S ASSOCIATION.—The following is a list of officers of the Wisconsin Fruit Grower's Association for 1858:

President—A. G. Hanford, Waukesha. Vice-Presidents—Col. H. Crocker, Milwaukee; D. I. Powers, Madison; D. Mathews, Burlington. Secretary—Charles Gifford, Milwaukee. Treasurer—C. C. Olin, Waukesha. Executive Committee—H. J. Starin, Whitewater; J. C. Brayton, Aztalan; Thos. P. Turner, Waukesha.

ANSWERS TO CORRESPONDENTS.

CHRYSANTHEMUMS.—In order to attain increased size in these beautiful plants, they may be *disbudded* before the blossoms expand, leaving only three or four flowers on each; and in the case of the large sorts, remove all laterals. The effect is, more perfect blooms. When their beauty is over move them, and put them in "by the heels" in some suitable corner, out of the way, to be replanted next season; dig the borders for the winter, and they may be filled in the spring with mignonette, verbenas, geraniums, and other gay bedding-plants. In this way a fair display of bloom is kept up.

T. T. S.—The *Jasminum nudiflorum* is hardy, and is one of the best winter-blooming plants we have. If grown in pots it requires to be kept dwarf and bushy, which is done by cutting in freely, especially the strong, rambling shoots, in summer, to encourage the production of small twiggy ones, which bear the blossoms. None of these should be removed till the plant has gone out of flower. It is easily propagated by means of the end spring shoots in a common hot-bed, or by cutting the long shoots into pieces with three or four eyes, and planting them in a cool border in September or October. It flowers best in a pot, with soil rather sandy and poor.

ONIONS.—V. S.—The seed of onions may be tested by sprouting a small quantity in boiling water. If it is good it will sprout in fifteen or twenty minutes.

H. C. BEARDSLEY, OHIO.—The grafting of the grape vine as described in April, may be done when the sap is in motion. If the root shows a disposition to bleed, grafting cement must be

used, so late as the time of setting the fruit; it is successful, if the graft has been kept in a dormant state.

T. W. COOK, Bendersville, Pa.—The plant you sent is *Silene Pennsylvanica*. We shall be pleased to see the articles mentioned.

GOSSIP.

MR. FORTUNE sailed from England to China, about two months since, in the service and interest of the United States, to collect a supply of tea-plants for trial in this country, as well as to procure other Chinese productions as may be desirable to introduce. It is said that Mr. Fortune considers the soil and climate of our Eastern States peculiarly adapted to the growth of tea; but does he and our Government remember the rate of wages there? It is creditable to employ such men, and we hope for good results. A private letter from Mr. Fortune says: "It shall be my careful study to accomplish the important objects which you have entrusted to me, and you may rely on my not submitting to exorbitant charges, and on my acting in good faith to the Government of the United States."

"I have had so much experience in packing and shipping seeds and plants from China to India and England, that I venture to suggest to you that my operations should be conducted in the following manner: It will be imprudent to trust my collection in one or two vessels, as living plants are easily damaged during a long sea voyage. The more prudent course would be to ship, by as many vessels as possible, say six or eight. But as this will occupy some time, I think I had better come home by the overland route, and bring the seeds (not tea-seeds) with me, and endeavor to reach America as early as possible, in order to receive the plants on their arrival. If, on the contrary, I accompany the last shipment, *via* the Cape, the first would necessarily be home several weeks before I could be upon the spot to examine it and do what is needed. My object in offering this suggestion is to secure, if possible, the success of my mission, and I have no doubt you will agree with me in the propriety of such a course of procedure."

DR. LINDLEY gets several "dressings" for having said the *Spirea callosa* was the handsomest garden shrub in existence. The "Cottage Gardener" says: "Why give heed to these rhapsodies? Botanists admire the greatest weeds; and as to *callosa*, it is hardly worth a farthing to the great mass for whom we cater. Dr. Lindley is a very good authority on some things; but his knowledge of practical gardening is very limited and very peculiar." A little jealous perhaps, as we find some folks to be in America!

THE *Chicago Journal* says, "The lamented Downing was undoubtedly the greatest poet of his time—among those, we mean, who write their thoughts of beauty on the garden or the green-sward. To counterfeit nature, to sprinkle the clumps of foliage as if they had been planted by the summer wind; to give to a little table of a plain the effect of hill and dale, and to a narrow homestead the apparent sweep of a spacious park; to teach the water to babble like a born brook along the artificial channel we have carved for it; to trace the paths in graceful curves, and hide everywhere the prints of the hand of art—these are among the achievements of landscape gardening, and some of the most exquisite stanzas of its living poetry. And this sort of authorship is one we have always envied; there seem such opportunities for the display of taste, for the *intimation* of beautiful thought. And then the books one must study to perfect himself in this poetic art are so many and so cheap, strewn everywhere upon the prairie, everywhere among the hills, all about in the woods. Such contrasts, such blending of tints, such admirable effects of light and shade, as fill the heart and soul with beauty. We do not know why one cannot make a lyric out of prairie wild-flowers; why he may not make a stanza of despised weeds; why he may not display his imagination and his fancy as well in a bouquet as in an epic;

why he cannot write 'thoughts that breathe' in 'words that burn' with all the glory of the sunset and the rainbow, quite as well upon a little patch of earth as upon a page of foolscap."

THE flavor of fruits is often entirely destroyed by their being packed in unsuitable substances. Bran spoils pears. It is a difficult matter to get a good packing material that will not communicate a flavor; moss, tow, flax-dressings, are unsuitable; the only substance which seems to be destitute of these bad properties is cotton, in the form of wadding; though the catkins of the beech-tree are well adapted, they are not so conveniently obtained.

ORCHARD HOUSES require much attention in the matter of watering. A saving of one-half the water, and the keeping the roots more regularly moist, is therefore important; the following method has been adopted, and might be employed for orange and lemon trees, &c., in large boxes: Take old wine bottles, cut off the bottoms about two inches high by passing round them a piece of thick worsted soaked in spirits of turpentine; set fire to this, holding the bottle in a horizontal position, and when this is burnt out pour on cold water; this will cut the bottle through quite clean, if well done. Make a hole down the inside of a pot with a blunt stick, insert the neck of a bottle to the shoulder, and press the soil closely around it. Fill the bottle with water as often as it becomes empty, by which plan the roots get a constant and regular supply. Should the soil get too wet, the water must be, of course, withheld for a time; and should it get too dry, pass a pointed stick through the bottle into the soil to give free passage to the water. Any who may try this plan will find their trees more at home in pots than they have hitherto done.

MIGNONETTE SAUCE.—Sauce is sold under this name in Paris, but it is only white pepper crushed into small granulations, and made into a sauce piquante. The French eat oysters with white wine and "Mignonette Sauce."

THE STATE GEOLOGIST of Missouri, suggests that the extensive "Barrens" of Kentucky and Tennessee may be rendered valuable for vineyards, and the numerous limestone caves become very useful as places for the storage of wine. He says it can be demonstrated that there are at least 20,000 acres in Missouri, Kentucky and Tennessee, in which the vine will succeed as well as in France or Germany.

THE BOSTON CULTIVATOR says: "Desirable as pears, cherries and plums are, we can hardly count on very large and constant supplies of such fruit. Our climate or soil is very unfavorable to such growth, or they are invested with so many insects and diseases, and require so much care, that few farmers can devote sufficient attention to their culture. The apple must be our main dependence."

POTS in which seeds are planted for bedding out, &c., should be plunged in something to keep the outsides of the pots from getting too dry, and from being hot and cold alternately; the seeds thus require less water, and the less they are obliged to have the more healthy the plants will be.

COCOA-NUT FIBRE given off in the manufacture of mats and matting, has been found very useful as a mulch for many plants, and especially for orange trees; new roots are rapidly formed in this material. As we have no such manufacture in America, the next best thing to promote a healthy growth is spent hops from a brewery. Orange-trees injured by winter keeping are almost brought to life by the free use of spent hops over the roots in their boxes.

MANY PERSONS complain that they cannot succeed well with the *Daphne Indica*. Cut the flowers freely, but be careful to leave some foliage below the cut; for if no leaves are left, that branch does not push again, and then the shape of the plant is spoiled. The stems of the plant are very short, but bouquet-makers know well how to form them on wire long enough for their purpose.

AN excellent way to celebrate May-day is that chosen by the young men of Dedham, Massachusetts, to set out fifty shade trees on the common of that town.

SHANKING OF GRAPES.—This is a disease which attacks the footstalks of the bunches, and appears to be occasioned by the temperature of the soil being much below that of the house in which the vines are growing; the supply of sap to the grapes is consequently much diminished, and the parts to which is given no support immediately begin to decay. The coldness of the soil induces torpidity of root action, and that perhaps at a period when the greatest demand is made upon the roots to sustain the excessive perspiration which is going on in the leaf, and to furnish fresh matter for elaboration. If the young fibres be examined after a season of cold drenching rains, and at inclement periods, they will be found to be discolored, and in some instances to be quite rotten. Consequently, I conceive that shanking is generally caused by the unnatural disagreement of temperament between roots and branches; the way obviously of preventing shanking is to secure a congenial temperature both to roots and foliage. Under great disparity of temperature in these respects, *Frontignans* are always apt to shrivel and shank.—*M. Austin.*

MISCELLANEA.

BULBS.—No bulb should be taken up for any purpose, or injured in its growth in any way *while the leaves are green*; for it should ever be remembered that it is the leaves that bring the root to maturity, and prepare it for flowering the following year. If these are injured or cut off, or if the plant is transplanted, unless with such a ball as not to touch any of its fibres, while in a growing state, the bulb will not recover so as to be able to flower, for at least one year, or perhaps more. Autumnal-flowering bulbs are not in a state of rest till the beginning of the following summer, as the *Colchicums*, autumnal-flowering *Crocuses*, *Amaryllis lutea*, and a few others. These, therefore, are to be taken up when their leaves begin to decay, early in summer, their offsets separated and planted in the nursery department, and the parent bulbs replaced in a month or six weeks, in order that they may have time to establish themselves and flower before winter.

LINDEN'S "Catalogue of New and Rare Exotics," cultivated by him at Brussels, gives the name and prices of a great number of novelties, chiefly from the mountains and valleys of tropical America. This year we have the following, now on sale for the first time, viz.: *Aristolochia leuconeura*, a fine foliaged twining plant, with deep green leaves marked with white veins; *Begonia Rex*, a magnificent Assam species, the whole stock of which is in the hands of Messrs. Rollisson; *Begonia Lazuli*, another Assam plant, so called because its leaves resemble in color the deep blue stone called *Lapis Lazuli*; *Boehmeria? argentea*, a shrub with leaves pale green above and marked with great blotches and pistules of silver gray, while the under side has conspicuous reddish brown ribs; *Campylobotrys argyreneura*, another fine variegated-leaved species; *Cyanophyllum magnificum*, a superb plant with leaves sixteen inches long, deep velvety green above, bluish purple below; the *Marantas fasciata*, *borussica*, and *pulchella*, all species with variegated leaves; *Spigelia anea*, a bronzed Lilliputian plant; and a new greenhouse *Monochostum*, called *sericeum*.

SOLOMON'S GARDENS AT JERUSALEM.—These celebrated gardens extend along a valley which runs from El-Bownach to Bethlehem. It is the most charming spot in all Palestine. There are murmuring streams winding through verdant lawns; there are the choicest fruits and flowers, the hyacinth and the anemone, the fig tree and the pine. Towering high above the garden, and contrasting grandly with its soft aspect, are the dark precipitous rocks of the neighboring mountains, around whose summits vultures and eagles incessantly scream, and describe spiral circles in the air. The rare plants and flowers, which Solomon collected within these gardens, were protected from the north wind by the mountains. Every gust of the south wind was loaded with perfume. With the first breeze of spring the fig tree puts forth its fruits, and the vines begin to blossom. It was, in the words of Scripture, "a garden of

delights." The vegetations of the north and south were intermingled. One part of the garden was called Walnut-tree Walk (or, as the English Scripture translation has it, "The Garden of Nuts"), another is the "Beds of Spices." The present tenant is an Englishman, Mr. Goldsmith, of the house of Goldsmith & Son, who is under-draining the garden on the Yorkshire system. Since the eastern war, Mr. Goldsmith has obtained the custom of the Pacha of Jerusalem for vegetables. Last year he had seven crops of potatoes—thanks to his wonderful drainage.

BLACK DAMASCUS GRAPE.—Attention has been called to the merits of this grape. I have been a grower of it on a large scale for the last twenty years, and it is one of the best black grapes grown, notwithstanding its reported character of being a shy setter and bearer. It is preferred to all other black grapes on account of its luscious flavor; in fact, a large berry of it furnishes quite a mouthful of juice of a most refreshing character. I have had berries of it one inch in diameter, and as perfect ones have only one seed, no grape with which I am acquainted yields so much juice. The seedless berries are preferred by some, being equal to many other perfect grapes in size. It will do well in the warmest end of any vinery, where the borders are well drained and managed. I find no difficulty in setting it well by drawing the hand when quite dry over the bunches, and gently rubbing the capsules off the flowers to free the pollen, keeping the temperature rather high during the process. Another good plan is to thin the wings of the bunches before flowering, as this gives more room and strength for the blossoms to expand. No variety of grape has the flowers so prominent before expanding as the Black Damascus; indeed, the young wood, bunches, leaves, and tendrils, are grosser and more succulent than those of any other variety. Like some other large, juicy grapes, the berries of this one sometimes spot in warm weather just when changing color; therefore they require shading for a few days. It is only grown as a late grape; it is in perfection in October and November. I should not recommend it for very early forcing, but for a summer or autumn grape, it is, in my opinion, the noblest black grape grown, and should be in every collection. *William Tillery, in the Florist.*

HINTS ON ROSES.—The following short epitome of rose-treatment contains all that is really necessary to be said on the subject:—Be not afraid of using the knife; one eye is enough to leave of any branch of the last year's growth, unless more are required to form the plant. Strong loam two parts and dung one part will grow the rose to perfection, although in most cases ordinary garden soil, with a good spadeful of dung to each plant, will do very well. To make handsome standard roses the head should be as wide across as the lower branches are high above the ground. In pruning, let all healthy branches that are growing in a proper direction be retained, but having attained the form of the head, spur them closely every year. Cut down all upright growing branches to the height you want side ones, leaving the top bud pointing in the direction they should grow. For the general feature of your garden, make use of continuous bloomers; that is, those of the nature of common China. Summer roses, that bloom a month and no more, are worthless, except for exhibition purposes. If you should desire, however, to grow summer roses, let them have a quarter in the garden to themselves. Never let their flowerless heads cast a gloom over the borders from July to November. Half prune in the autumn to lessen the weight that has to stand against the wind, and finish in February. In planting never forget to cut off, with a clear sharp cut, every portion of damaged root, for bruised ends and ragged wounds are generally fatal. Briars and other stocks for budding, should be planted in autumn, that they may be well-established when wanted. Bud when the bark of the stock will part easily from the wood, and be quick in performing the operation. Bud as close as possible to the main stock; it makes a better head, and is close to its support. Put cuttings in the open ground in October and November; two joints under ground, and one or two above. Get roses, as soon as you can get them to grow, into the form you want; from that time cut every year's growth back to a single eye. This applies to dwarfs, standards, bushes, and climbers. A tender rose on a stand-

ard will take less harm if lifted and laid in "by the heels," under shelter, than it will if it stand out; plant again in its proper place in the spring. Tender roses may, nevertheless, if you approve of the appearance, be tied in close, and covered with moss, straw, or matting, or even with an oil paper-cap. Cut off all fading flowers. It helps the remainder and prolongs the bloom, besides looking neat and clean. Strike all cuttings at the fall of the leaf in preference to any other time, and an ordinary border will do for them. China roses that grow and bloom all the year under glass, may be grafted or budded at any time, provided the stock be also China, and growing also.

THE DEATH OF THE WATER LILY.—I am always in hope of seeing one of these beautiful Lilies in the act of dying; it is so lovely a flower-death—there is no pain in it. When the seed ripens in the Lily-cup, and her bloom is over, she does not cast her seeds to the winds, and fade, wither, and decay, like earth-flowers; but she slowly turns upon her pale face, and rests it upon the water, while the seeds sink in a golden shower back to the parent stem, far beneath the water. Thus they never leave their parent loch, but flower there for ever.—E. MACKENZIE.

Notes for the Month.

VINEYARD CALENDAR FOR JUNE.

BY R. BUCHANAN, CINCINNATI.

THE principal business of the vine-dresser, for this month, is what is termed "Summer Pruning," viz., rubbing off suckers from the main stock, cutting out shoots from the axils of the leaves, and shortening in branches that are growing too rampant; but above all, carefully tying up the vines to the stakes to prevent their being broken off by winds, and in such manner as to leave sufficient light and air to the branches of fruit, which will now be growing rapidly. Should weeds grow too fast, they may be kept down by the hoe, or cultivator, or by light surface-ploughing. It is thought best not to open the ground much in the vineyard this month, for fear of mildew or rot, from excessive moisture. The sulphur experiment, as a remedy for these diseases, may be applied this month.

In the calendar for May, the word "barriers" is printed for *berries*.

BY WILLIAM SAUNDERS.

VEGETABLE GARDEN.—There is always more or less green vegetable refuse in gardens during summer, such as potato tops, pea baulm, and similar matter, which is either allowed to remain on the ground and dry up in the sun, or deposited in a heap for the purpose of forming manure. A better disposition of such products is to dig them at once into the soil; there are always some spare corners, or uncropped spots, which may be enriched by becoming a place of deposit for rubbish of this kind. Even the short grass from lawns may be covered at once, if no more useful disposition can be made of it: such as mulching between the rows of vegetables, or over the roots of recently-planted trees. There is much loss of enriching matters by allowing these incidental accumulations to lie on the surface; and even as a matter of neatness and regularity, they should be at once disposed of, and rendered useful for future crops.

FRUIT TREES.—Summer pruning, or pinching the points of young shoots, seems not to be so thoroughly understood as its importance demands. It is not too much to assert that the highest degree of cultivation cannot be reached, until its importance and necessity is fully comprehended and recognized. The whole aim of pruning is to modify and direct growth so as render it subservient to the wishes of the cultivator. At no time can this be more readily attained than during the season of growth. It is much easier to prevent a shoot from growing now where it is not wanted, than to cut it off after growth is completed, just as it is easier to rub off a bud than cut off a branch. We allude to established trees. It would be well for all cultivators to study this matter practically. Especially is it desirable that a practice should not be condemned, in the absence of knowledge as to the proper applications of the principles upon which it is founded.

ROSES.—To form well-furnished and finished beds of roses, procure such kinds as *Souvenir de Anseleme*, *Sombrieule*, *Amie Vibert*, *Glorie de Rosamene* and *Fellenberg*, and plant them so that the stems may be readily pegged down to the surface of the ground. Roses, as procured from greenhouses, are generally tall, slender, and destitute of low side branches, and when planted out, require an amount of support from stakes that sadly mars the beauty of the plants, and do not harmonize well with the general neatness of the flower-garden. To remedy this defect, let the plants be laid down horizontally, and the stems separated and pegged close down. The whole plant will set up a new crop of shoots and flowers, and preserve such a uniformity of growth as will render it a rival in this respect to the verbena. When treated in this way, flowers are produced in masses; although to procure the greatest uniformity, kinds of similar habit should be selected. We cannot imagine any feature that would be more interesting than a small geometrical arrangement of beds, each planted with a distinct variety of rose, and managed as above. Roses laid so near the ground will be much less likely to be destroyed by severe winters, and if necessary, they can be covered with great facility.

GREENHOUSE.—The proper application of water is of great moment in the cultivation of pot-plants. The *Tell-Tale* pot noticed in the last number will be a useful indicator, although very porous or absorbent pots are not by any means desirable so far as cultivation is concerned.

It is a good general rule never to apply water to a plant until it is dry. The difficulty, however, is in knowing when a plant really requires water; and simple as it may seem, this knowledge can only be acquired by practical and studied observation; and without it the highest degree of cultivation cannot be attained. There are a few general rules which it may be useful to recapitulate. Watering should always be done in the early portion of the day. There are various important reasons for this practice that we cannot now enumerate or fully explain. Plants in small pots, with a system of thick matted roots, will require much water; in this case it is hardly possible to hurt by too much water, if the plant is in a growing state. Let this plant be removed into a larger pot, and the fresh soil will act as a reservoir, and will obviate the necessity for frequency of the waterings. As growth increases and the roots extend into the soil, they will suck up more moisture, and consequently will require more frequent applications. Plants with narrow or small foliage require less water than those with large spreading leaves. During the period of growth, there should be a regular and constant supply, as they are very sensible of any check at this period. When the weather is damp and dull, the leaves perspire very slowly; there is little lost by evaporation from their surfaces, consequently there is less absorption by the roots. The application of water when properly understood, is the most powerful controlling influence which we possess in the artificial management of plants.

LAYING OUT GROUNDS.—To strike out the seemingly rude and simple outlines of an arrangement for a villa residence, with its various accessories, requires a reflective mind, alike conversant with the forms of nature and principles of art. It is a subject, the details of which admit the exercise of the purest taste, and cannot be confined to the formality of mechanical rules. The only rules that can be adhered to, are those of elementary principles. The leading features to be constantly kept in view, are utility, appropriateness, and expression of purpose. The vegetable garden, stable, &c., should be of ready access from the house; walks should lead as directly and easily from point to point as circumstances will allow. Gentle curves in walks are always pleasing where appropriate; but if a straight line is seemingly more convenient, do not attempt a curve. Many minor details have to be secured, and their suitable introduction, forms in the aggregate an important consideration in the ultimate and matured plan, although individually they may appear neither interesting nor of much consequence. I have remarked that no mechanical rules can guide matters of taste. Numerous circumstances in each individual case will confirm this assertion. No person of cultivated taste can, or will, adhere to rigid rules. All our essays on rural taste and landscape gardening seem to be deficient in general practical details, while at the same time they do not enter sufficiently into elementary principles.

In a recent number, I questioned "Whether more real progress would not follow from the promulgation of principles only, than in the enunciation of practical rules." In matters of taste this admits of no question, and those who would wish to qualify themselves as critics or advisers should carefully study such works as "*Knight on Taste*," "*Price on the Picturesque*," "*Allison's Essays on Taste*," "*Wilson Flagg's Studies on the Field and Forest*," "*Addison's Pleasures of the Imagination*," "*Ruskin's Works*, especially his recent letters on the "*Elements of Drawing*," "*Burke's Essays on the Sublime and Beautiful*," the latter more for its reasonings than its deductions, and "*Kame's Elements of Criticism*."





BATCHELOR APPLE

For Market Purposes!



IS an expression frequently employed in conventions and other places, to designate and recommend a description of article which looks well and is readily produced. It might be proper for some one to protest, in the name of the public, against the use of the phrase, unless it is accompanied by an explanation.

While we write, the "Country Gentleman" came to hand, with the following paragraph from a nurseryman, recommending various strawberries, and among them his own, which he prefers to all others. We had set out determined not to cite examples, because they are so numerous and well known, but the following will serve to confirm what we mean to say. It stands literally thus :

"*Scott's Seedling*.—Rapid grower, perfect flowers, very handsome, long conical berries, of bright scarlet color, and bears abundantly, but is quite deficient in flavor; might undoubtedly be profitable for marketing."—*Country Gentleman*, 1858, page 302.

A fruit *may* be honestly recommended for cultivation because it will carry to market better, and be received by the consumer in a better state, by reason of its firmness, and such was the meaning of the expression when it was first introduced; but the application of the words too often now means a poor or inferior fruit with a good-looking exterior. "Good manners are a perpetual passport," used to be the maxim, but of late the greatest rogues wear the best exterior, and are most agreeable and inoffensive in their manners. The *best looking* gentlemen in Europe are the card-dealers at the gambling institutions of the German watering-places. They are selected for their distinguished appearance and their *suaviter in modo*; but this is a fraud upon the credulity of the public, and it becomes a question whether we should not investigate the propriety of holding out false colors by recommending a market product, purely for the single reason that it will command the eye by putting on an appearance of excellence which it does not possess, or in other words that it will *sell*. Is it to be expected that the purchaser will be pleased when we virtually assure him that this or that fruit, labelled by our teachers, "for market purposes," is a very good article, when in an adjoining basket is another, the label on which is in reality, "for connoisseurs," or shall we say "for those that know better."

Everybody has once tasted, in their youth mayhap, under favorable circumstances of good health and appetite, some fruit of luscious exterior and corresponding value, the remembrance of which is a bright spot "on memory's page." That morsel gives a certain coloring to all one's future. If the same tempting appearance presents itself in the market or at the shop, it is not much matter what the price is, a portion large or small finds its homeward way. Perhaps the busy merchant, while extensive transactions have engaged his morning hours, mentally recurs now and then to the fine dish that will inevitably be the chief attraction at his desert. He will then descant upon "what is good," and tell his listeners how it was when he was a youth. Dinner is despatched, the fruit is produced; no comment; when it does come, it is sadly pronounced, and sounds thus, "Ah! it don't

taste as it did when I was a boy !” “But,” chimes in his wife, who is opposed to smoking perhaps, “you forget that you’ve deadened your taste with tobacco !” “I don’t care if I have, it is not the same thing.” And it is not. Who that has partaken of a Seckel pear under the tree, that was properly cultivated, thirty years ago, relishes the poor little knots, of less than half the size, that are now their lineal representatives. Some people have abandoned the cultivation of the acknowledged best pear in the world, to try experiments on new and doubtful kinds. We have been experimenting with all our energies to supply the dear public with the best strawberries, and now recommend one “*quite deficient in flavor !*” Peaches are rarely met with of the excellence of “old times,” and many people have abandoned looking for them.

“We have better fruits than we had then,” shouts some young enthusiast. So we may have in some departments, but it will be well to inquire where this constant selection of kinds “for market purposes,” as now understood, will land us. People will purchase strawberries and raspberries to the end of time, but if they discover you have brought too many *for their looks alone* they will grow chary of their cash, and declare them an unnecessary expense, having no longer the taste the fruit had when they were young.

We always look cautiously at fruit recommended only “for market purposes,” and so sure as it is inferior to the best, so surely will its price ultimately indicate the fact. A big cherry with two bites on it, and no flavor, will not do “for market purposes” very long. *Let us aim at the very best*, and trust to a generous public with a pocket always full of money and pretty well posted on the subject of flavor.

Too long has this “for market purposes” been the burthen of market men. A farmer’s wife colors her butter with annatto, or the juice of the carrot, and exultingly says, “That’s the thing for market purposes,” while perhaps it is so inferior in good qualities that she would not set it before her friends. It *looks* well, takes the fancy of the boarding houses, just as brewed wine brings ten dollars the gallon, provided it has the right sort of look, and smacks of ether, though it is colored with poke-berry juice and filtered through coarse paper. Very few people know that the foreign cordials sold in nice strawed bottles are made of gum arabic and flavored with an essential oil. Leave out the cork and the oil evaporates, nothing remains but a solution of the gum.

Thus, “for market purposes,” all trades unite to palm off inferior goods, and few enough are the wholly genuine. A large and well-colored berry has the preference over the one with the true flavor. A sweated fruit of golden hue commands three prices beyond the same awaiting Nature’s preferable processes. Let us, as horticulturists, cease to imitate the rogues; let us, who live with and consult with nature, give her due credit for good intentions, and not torture her into a love of gay fruits with hollow pretensions and pithy hearts. If such plans are recommended from the pulpits of horticulture, what will be the result ? We shall learn to tolerate and commend other false pretensions; we shall love young ladies who consider it sufficient to have full skirts and empty heads; a silk dress will be thought better than a knowledge of bread and butter making; newspapers printed so as to look like the genuine thing, will be crammed with foolish agricultural and horticultural matter,* made up of a collection of reckless invectives,

* Witness already the *Rural New Yorker*, which actually taught lately that grapes would hybridize with the hickory nut ! about as possible as for the pumpkin and strawberry to unite and make strawberries and cream. It has a contributor, whose writings we rejected, thus characterized by one of our best informed correspondents :

hardy assertions and insolent bigotry, strong in the confidence of self-satisfied ignorance. Everything will become a sham; thermometers will be highly varnished and tell false tales; spy-glasses will have a shining exterior, with window-glass substituted for the polished lens; all our fruits will be "quite deficient in flavor," and people will cease to buy them.

The purchaser is as much to blame as the vender, for he encourages the deception, which has perhaps been taught him in "the books;" but honesty continues to be the best policy, and in future let us hear of such fruits as are better than those usually employed "for market purposes." We venture to suggest that the pomologists lead in the reform, or their vocation may be gone.

They have a term abroad, in manufacturing districts, which is of the same tendency. They say, "for the American market;" and if you will compare the texture of goods manufactured for us with those made for consumption at home, you will find the one flimsy to the utmost capacity of the loom, the other as substantial as possible for the price; the one "finished" for show, the other for wear. Every region of the globe is ransacked for *imitations*. The reason is, we have got into the habit of asking for these things to be cheap; the too numerous "store-keepers" cannot get a large profit on a good article; every buyer at retail wants the chief element to be cheapness; the consequence is that in consuming dry goods, the purchaser buys a barrel or two of American sour flour, that has twice paid freight across the ocean, and is employed in the form of starch, to keep the flimsy substances in shape till it is rubbed off on the wash-board, and the wonder is that "goods now-a-days *don't wear*." The love of change and "new styles" reconciles the ladies, if it does not exhaust their husbands' or parents' pockets. But is it to be expected that people will always buy berries wholly without flavor, if they find it out, as they surely will. There is varnish and deception enough already in the world. Reform it altogether.

GREEK IDEALS OF GARDENING.

BY PROFESSOR E. NORTH, CLINTON, N. Y.

To the earnest, practical scholar, who likes to keep his thoughts busy with something beyond the dry husks and integuments of ancient learning, everything pertaining to the country and landscape scenery of the Greeks is endowed with a singular fascination. So deeply is he enchanted with the spirit of Homer and Plato and Theocritus, so intimately is their life absorbed into his life, that he owns an attachment for the soil they trod, for the skies that bent above them, for the streams beside which they walked, weaving their thoughts and feelings into verse; for the trees, beneath which they playfully chatted, or soberly discussed knotty problems in philosophy. This interest is not unnatural or puerile: it brings both a pleasure and a profit. The mountains and rivers, the rocks, glens, and trees of Greece all had a voice in deciding and shaping the character of its inhabitants. Especially was this true of her poets, whose companionship with nature was more inti-

"Can you tell me what he is; he intimates that he is deeply versed in Natural Philosophy and scientific research. Really I never heard of him. He intimates that the Pomological Society should give him the same encouragement and patronage that the New York State Agricultural Society gave Dr. Fitch. It is self-conceit all over, without any knowledge." Very true, but it is not the first time the individual has mistaken his vocation, nor will it, we suppose, be the last, such is the unfortunate constitution of his mind. Jerrold said to a young man who burned to see himself in print, "Be advised by me; don't take down the shutters before there is something in the window."

mate, unreserved, and free from disturbance, than that of her orators and historians. If one would arrive at the truest conception of the Greek character, in its æsthetic phase, teaching his inner eye to detect all its delicate shadings of thoughtfulness and half-bid revealings of poetry, he must take into account the influence of these natural agents.

Amid the perpetual flux and noisy changes of human life, nature remains the same. It is pleasant to know that, as it regards physical features, Greece continues at this day what she was twenty centuries ago. Her sky is pierced by the same Olympus whereon the early fables fixed the home of the gods. Her poets and orators are gone ; her temples and theatres are in ruins, but her rivers and her trees remain, like her literature, unchanged.

“ Art, glory, freedom fail, yet nature still is fair.”

If we take the trees of the Greeks, more especially those selected for gardens and public grounds, as giving an expression of Greek character, it will be seen that they were made to satisfy higher needs than those of the mere mechanic, the fruit-grower, or even the ornamental planter. To the eye of a Greek, whether cultivated and tasteful, or ignorant and superstitious, a tree was something better than a bundle of vegetable organs, that answered its only mission when it had contributed to his physical support, enrichment, or pleasure. It had a moral significance. It spoke a language as many-voiced and potent as that which flows from human lips. Such of the Greek trees as were distinguished for their beauty or utility were held sacred to divinities. They had also emblematic uses, as numerous as they were ingenious and eloquent. This was not all. The Greek trees discharged other offices, which, though less specific, and not recognized in set phrases, were none the less real, touching closely the national life. They had tongues, and preached daily lessons to all who sought the cool baptism of their shade. The squandered fragrance of their blossoms breathed lessons of kindness. Their gesturing branches and murmuring leaves gave instructions in grace and music. Their autobiography, as rehearsed by their very presence, was a volume of wisest proverbs. They taught that the most stupendous results are inclosed in the seed of each living principle, as Dodona's forest sleeps in the acorn's cup. Starting from minute germs, making themselves tall and strong and fair, by their own industrious vitality, by slowly adding fibre to fibre, by pushing out branch above branch, and leaf beyond leaf, by getting something of gain from each shower and dew-fall, from sunshine and breeze, by wrestling with storms manfully, by striking deep their roots and sending them out on remote excursions after food, they taught the exceeding worth of strong will and plodding patience, and hopeful energy and faith. Over all the large, earnest souls of Attica, the Attic trees stretched out fraternal arms, breathing blessings.

Of all the superstitious notions entertained by the Greeks, the most poetic was that which associated with every tree a wood-nymph or hamadryad, whose life commenced and was doomed to perish with the life of the tree. Reference is made to the fabled hamadryads in a paragraph of Homer's Hymn to Venus : “ Along with these nymphs at their birth are born either beech-trees or high-headed oaks on the generous earth, graceful of form, vigorous. They reach towards the sun on lofty mountains, and are called the groves of the immortals, which mortals never assail with the axe. But when the doom of death is at hand, the graceful trees are first withered and

the bark dries up about them, and the boughs fall off, and then their life quits the sun-light."

Several ingenious allegories have been founded on this botanic myth. Not to dwell at this time on such fancies, (*poëticas decora fabulis*), and without undertaking a description of individual trees, (a topic that would claim an entire article, and might be made to fill up a volume,) I propose to speak of the treatment that trees received from the Greeks in their gardens, public grounds, and ornamental landscapes.

Among the Greeks, the art of ornamental planting, or of expressing the beautiful in Gardening, divides itself historically into two periods. They are the Homeric and the Platonic periods.

As individual character often takes a tone from intimacy, or want of intimacy with trees, so national features may be detected in the treatment and culture of trees, as ornaments of the garden and the landscape.

Homer's ideal of a garden is given in his glowing picture of the grounds about the mansion of Alcinous. For brevity's sake we translate loosely.

"Near the palace was a large garden, hard by the gates, covering four acres. A hedge was stretched about it on every side; within, tall, sturdy trees had grown up, pears and pomegranates, apples, bright-fruited, and luxuriant olives. Of these the fruitage decays not, fails not, either in summer or winter, lasting the year round. Pear grows mellow after pear, apple after apple, grape-cluster after grape-cluster, fig after fig. There also a rich-fruited vineyard had been planted, with a level drying-ground, warmed by the sun. There, while some grapes they are treading, others they are gathering. In front are green grapes, having just cast the blossom, while others are purpling into ripeness. Here, too, are neatly-kept flower-beds, beside the last row of trees, blossoming throughout the year. Finally, there are two fountains—one is carried over the grounds for irrigation—the other flows into the palace, whence the occupants supply themselves with water. Such are the glorious gifts of the gods to the home of Alcinous."

The picture thus sensuously painted, is one that offers every thing to the palate; yet little to the soul. It is poorly fitted, with all its miraculous details, for stirring the heart's deep springs of poetry and feeling, and for

"Annihilating all that's made
To a green thought in a green shade."

The Beautiful is overshadowed and dwarfed by the Useful. Homer's trees in the garden of Alcinous are wonderful and desirable; not because they furnish a pleasant home for birds of song and humming cicadæ, not for the grace and animation they give to scenery; not for the cool, creeping shadows wherewith they dial off the long summer hours on the clovery turf; but solely for their endless supply of luscious fruits. This were a paradise too coarsely sensual, save for the age of Homer, or the dupes of Mahomet. Albeit a wealthy and great-hearted monarch, Alcinous' ideas of gardenesque beauty are cramped and gross. His wine-press is as much out of keeping where the poet puts it, like a rude impertinence, between the palace and the flower-beds, as would be a cider-mill in the French Emperor's *Jardin des Plantes*. He is resolved, apparently, that his water-works shall pay well for the room they take up. The two fountains suggest only ideas of use and convenience. They are little better than a pair of drinking-troughs. One of them, had the Greek been rendered literally, would have seemed to do the duty of a town-pump.

It is nought to Alcinous that water likes to leap heavenward, and dance

in the sun-light as David danced before the Lord. It is nought to him that water is born with the inalienable right to life and liberty. It is nought to him that water has a natural turn for music, and will sing in chorus with birds and morning stars, if one but allow it a pebbly rill to run in.

Another gravest fault with Homer's model is, that it cannot be put into realization by human agency. It contradicts the fixed order of nature, by mixing seed-time and harvest, and expelling winter from the calendar altogether. Homer's instinct was more trustworthy than his cool judgment. His quiet and winning sketch of the scenery about Calypso's grotto, when he was making no effort to astonish, is in perfect fidelity to the principles of landscape gardening, as developed by modern artists. Hear him, with Alexander Pope to interpret :—

“ Without the grot, a various sylvan scene
 Appeared around, and groves of living green.
 Poplars and alders ever quivering played,
 And nodding cypress formed a fragrant shade,
 On whose high branches, waving with the storm,
 The birds of broadest wing their mansion form.
 Depending vines the shelving cavern screen,
 With purple clusters blushing through the green
 Four limpid fountains from the clefts distil,
 And every fountain pours a several rill,
 In mazy windings wandering down the hill :
 Where blooming meads with vivid greens were crowned,
 And glowing violets threw odors round ;
 A scene, where if a god should cast his sight,
 A god might gaze and wander with delight !”

Plato's ideal of gardenesque beauty is hinted at in the opening of his *Phædrus*, where the scene of the dialogue is described somehow thus :

“ By Juno, a beautiful retreat ! Here the platan spreads very widely its cooling boughs, and is superbly tall. The twilight beneath the low willows—how refreshing it is !—and the whole air is filled with their pleasant fragrance—a cheerful fountain of coolest water flows beneath the platan, which appears to be sacred to certain nymphs, from the statues of virgins that adorn it. Then, again, notice what a summer-like and agreeable singing resounds from the choir of katydids. But the sweetest sight of all is that of the grass so persuasively adapting itself to receive on its sloping velvet the reclining head.”

Plato's ideal represents an advanced stage of culture and refinement. It represents a period when sense was subordinated to spirit, and the glories of nature were wedded to the creations of art, or brought into kindest rivalry with them ; and this, without sacrificing to the association aught of nature's simplicity. The Platonic garden was a place where temples were built to the Naiads and Oreads, with which Homer's fancy had peopled every stream and wooded hill ; where tempting walks coaxed the feet through wierd perplexities of shade and fragrance ; where glades opened through to waterfalls, spanned by rainbows, as if to afford a playground for sublime thoughts ; where drooping willows caressed the white brows of marble goddesses :

“ Where meeting boughs and implicated leaves
 Wove twilight o'er the poet's path.”

The Platonic garden was a place for social enjoyment. Friends there came together, without ceremony, in the long summer evenings, and timed the music of their talk by the cicada's ticking in the grass. It was a favorite place for intellectual encounters and jousts of wit. Instead of a smooth

spot warmed by the sun, where slaves were treading grapes in the wine-press, and water-tanks where drudging housemaids were filling their pitchers; it had green broad lawns, shaded by platans and olives, with temples sacred to dance and song, and inviting seats sacred to conversation; where keen thinkers were solving the problems of a philosophy, well-named divine: a philosophy

"Not harsh and crabbed, as dull fools believe,
But musical as is Apollo's lute."

There are few things in which the triumphs of genius and art are more signal and limitless than in Landscape Gardening. The artist gardener is dependent upon Nature for every feature of rural beauty that he develops. Yet he almost seems to originate where he only improves or reproduces. He can select what is comely, and discard what is worthless; he can chasten what is rude, and enliven what is tame; he can harmonize as well by sympathy as by contrast. He can pleasure the eye and the ear with unexpected sights and sounds; herein lie the secrets of his power. The visitor who walks through the grounds at Chatsworth, sees not a single element of rural beauty that may not be seen somewhere else; yet here these elements are so crowded together and so skilfully grouped, nature's deformities are transformed into such loveliness that one can scarcely believe he is treading the same old worn-out and ugly earth which was blasted with the primal curse.

Proportionately as men advance in civilization, their love for the beautiful in gardening grows deeper and stronger. With each onward step in self-culture, there is a marked improvement in their skill and taste for managing the details of a parterre or an ornamental landscape. The passion for natural beauty sometimes attributed to the Indian and the wild trapper will not bear a close inspection. They will stop to admire whatever stuns and amazes, like a cataract; but are generally cold to that which insinuates its lesson of loveliness in the whispering of leaves and the tinting of flowers. They are like Alcinous, seeing most beauty in what contributes most to the joys of the table. Their chief love is given to objects that gratify the animal appetite, heedless of what would minister through the outward senses to the hunger of the heart. Who ever heard, unless it were in some fiction's baseless fabric, of an Indian planting a rose-bush by the door of his hut; or a trapper stretching an æolian harp in a crevice of his cabin?

It sometimes happens that a teacher is outstripped by his pupils. Homer gave a lesson to the Greeks in ornamental planting. Selecting whatever was most admired in the garden of Alcinous and the Retreat of Calypso, they added other features suggested by their own genius and riper taste. Yet they failed to fully perfect the art of heightening the expression of rural beauty. To do this was a triumph reserved for our own Milton, who has improved upon Homer and the Attics.

In picturing his Paradise, Milton is careful to keep within the possibilities of Nature. There, nothing that reads like an extract from Baron Munchausen or the Arabian Nights. At the same time he is more liberal and artistic than Plato. His imagination moves with a more graceful freedom, a more various fertility. Aware that breadth and variety of view are essential to a landscape's permanent charm, he has warily avoided the use of definite and belittling terms. In place of prisoning the reader's fancy to a four-acre lot, misnamed a "great" garden, and half a dozen sorts of fruit-

trees, he permits it to wander, at its own sweet will, in a limitless mazy error

“ Beside crisped brooks
Rolling on orient pearl and sands of gold,”

Amid

“ Flowers worthy of Paradise, which not nice art
In beds and curious knots, but Nature boon
Poured forth profuse on hill and dale and plain,”

Amid

“ Groves whose trees wept odorous gums and balm,
Others, whose fruit burnished with golden rind,
Hung amiable,”

While

“ Level downs and flocks
Grazing the tender herb, are interspersed ”
“ With grots and caves
Of cool recess, o'er which the mantling vine
Lays forth her purple grape, and gently creeps
Luxuriant.”

In his finished idea of a landscape garden, Milton was far in advance not alone of the Attics, but of his own age. After the lapse of two centuries, both prolific in contributions to the refined comforts and pleasures of life, the graceful flight of his inventive fancy is hardly yet caught up with, by the slow steps of practical art. If the picture of rural scenery he has so charmingly sketched, could be embodied in all its happy adjustments of wood and water, of lawn and rocks and sky, with its cheerful groupings of animal and vegetable forms, and above all, the entire absence of any thing like straining after effect, so that

“ Nowhere appeared the art which all this beauty wrought,”

what rapture would it not bring to the eyes of our Loudons and our Dqwnings?

RUSTIC FURNITURE.—FIRST ARTICLE.

THERE are many persons who would be glad to use tools for useful purposes if they only knew how. Rustic furniture is one mode of amusing themselves usefully. Though in the open air this kind of seats are liable to early destruction from the influences of air and moisture, it is an object to possess some specimens in a garden or lawn. Attention to housing them in winter, will greatly add to their longer utility.



Fig. 1.



Fig. 2.

In cottages this description of furniture is very appropriate. In summer bowers, piazzas, and near or in garden walks, it is pleasant to see, if not to

rest on, such objects, which have an "expression of purpose" about them satisfactory to the mind. Under a fruit tree, an easy seat is proper and comfortable. Every agricultural laborer is more or less accustomed to the use of tools, and it is surprising how a little use in the adaptation of the materials at hand increases one's facility in such work. An old apple or pear orchard furnishes capital materials; all that is required for their construction is a saw, an axe, a gouge, and a few nails. The requisite skill is possessed by every man of ordinary intelligence; the taste grows by its exercise.

The adaptation of the natural growth of a branch to the required purpose must have the first consideration and will come by a little practice. In Fig. 1, the triple fork of a branch of a tree simply reversed and flattened, forms the legs of a stool, on which a rounded piece of plank is nailed to complete it.

In Fig. 2, a branch is spliced to the main stem or front, to form legs, and the seat made as in the former instance by pieces of plank, or even more simply, by smoothing the top of the main branch, when this is tolerably thick in itself. Advantage may be taken of some of the knots and excrescences to give a grotesque resemblance to an animal, by carving a head with eyes and mouth. Such forms may be infinitely varied.

In Fig. 3, a thicker plank of elm, perhaps, should be chosen, and the edges slightly bevelled beneath. The holes should be bored with an auger, and the feet wedged in from the top. In this, as in the other figures, the difficulty consists in the choice and arrangement of such pieces as will interweave together, and form stiffening braces to the work.

The tops of tables, Fig. 4, may be made of fir plank, and have a stout split batten underneath them. If the branching will not naturally trace the legs, pieces may be *grafted*



Fig. 3.



Fig. 4.



Fig. 5.

on, and in such cases the application of the gouge to the edges will quite take away the unpleasant effect of the junction.

In more complicated seats, such as the chair, Fig. 5, the difficulty consists in having their arms and backs made sufficiently symmetrical. A branch being chosen having the requisite bend, it must be sawn down perpendicularly to the shape which is required. Opened out, it forms two symmetrical sides properly handed, with a rounded side for the front, and flat behind.

We shall give in our next number some further illustrations of arm chairs, flower baskets, &c.

OVER-RICH OLD GARDENS.

No doubt every observant gardener has seen spots of ground that by over-manuring for a succession of years had ceased to be productive. The only remedy to make them again useful, is to clear a good portion of the richest earth away. Generally speaking, there are but few places where an exchange may not be made for fresh earth, as this garden soil forms one of the most valuable dressings for pasture or meadow land which can be met with. It is not always possible to get turf, or even soil from pasture land; but failing this, that from arable land, if moderately fresh and loamy, will form no bad substitute. Next come old banks, the parings from roadsides, any scraps of fresh soil obtainable where alterations are making. When the rich topsoil has been removed, spread a good dressing of quicklime over the lowered surface and fork this in; if the lime is an inch in thickness it will do good. Afterwards road scrapings or old mortar may be added, when the soil is heavy; and marl, or a dressing of the scourings of ditches, when light. When this is well mixed with the lower spit, bring in the fresh earth and well incorporate the whole together. Rather than do this imperfectly, I would recommend that a portion only be done at once, selecting those parts on which Peas, Cauliflowers, Cabbages, Onions, and Carrots are to be grown, and leaving the plots appropriated to Asparagus, Seakale, and Rhubarb for after consideration, as it is found the latter are not so particular to soil as the former. Above all, the fruit tree borders, if they cannot be entirely renovated, should have fully one-half of the old soil removed and replaced by fresh, draining the borders when necessary, and having a good rubble bottom one foot deep, over which two feet of the compost should be placed for trees. I may here add that many kinds of fruit trees may safely be lifted, if carefully done, and the roots laid in any spare piece of ground while the borders are being renewed, more particularly Pears, Plums, and Apricots; and that these kinds will grow on richer soils than the Peach and Cherry.

Where it is found impracticable to remove any portion of the over-rich soil of a garden, then the next best thing to do will be to employ only those materials which are found by practice to counteract soils containing a superabundance of organic manures. Lime is one of the best and the most readily procurable; I can strongly recommend newly slacked lime, mixed with a small quantity of salt, as a valuable compost for old garden soils. The proportion to use should be after the rate of sixty bushels of lime, and two cwt. of salt per acre. Superphosphate of lime, mixed with a small quantity of nitrate of soda, comes next, but is more expensive. Both these applications should be forked in immediately they are spread over the ground. Where new

compost has been procurable, the subsequent use of manure should be guarded against. Let a dressing of hot lime be given every third year, adding phosphate and guano occasionally, in place of stable dung; and lose no opportunities of applying road scrapings and marl, or calcareous soil, where much manuring is necessary, as it will improve the staple of the soil and tend to promote fruitfulness in the crops.

Liquid manure is also a better material than stable manure for these gardens, as it is more easily taken up by plants; and with chalk or lime occasionally added, will tend to form a better and more productive soil, and one capable of keeping in good heart for years, without the danger of getting over-rich.—*Florist, Fruitist, and Garden Miscellany.*

NOTES ON NEW PLANTS FLOWERED IN AMERICA.

BY DANIEL BARKER, SPRINGFIELD, MASS.

I PROPOSE, from time to time, to occupy a small space in the columns of the *Horticulturist* for the enumeration and description of new and choice flowers that have bloomed in this country, simply from a pure desire to benefit those of your numerous readers, who may, like myself, be ardent admirers of those gems of the creation. I am fully aware of the difficulty of describing well new flowers and plants, but having no interest to serve beyond the admiration I feel as an enthusiastic lover of them, I pledge myself to execute it with truthfulness and accuracy as far as I can possibly accomplish it.

Cineraria, Prince of Wales, (Turner).—A new variety from Europe. Flowers large, of excellent form; color pure white, edged with bright blue, and purple disc; habit very good. The plant from which the above description is taken, I presume, is the first of its kind flowered in this country.

Fuchsia, Gloire de Neisse, (Rothers).—A great novelty from Germany. This will prove one of the most attractive additions to any collection. A free and robust grower, and apparently a very free bloomer; sepals white, tipped with green, and beautifully reflexed; tube a delicate blush; corolla a blush pink or rose, striped with white.

Azalea, Iveriana.—A most beautiful variety; color pure white, beautifully striped with red. The form and size of flower, with the habit of the plant, is excellent, and highly deserves extended cultivation wherever azaleas are grown.

Azalea, Trotheriana.—A fine and beautiful variety of upright growth. Color of flower a bright violet rose; an abundant bloomer.

Azalea, Beauty de la Europe.—This is not a new but a charming variety. Color of flower, pink, beautifully striped with carmine. No collection, however small, should be without this beautiful variety.

Azalea, Adolphi f. Pleno.—Double purple; a fine, free, early bloomer.

Azalea, Albertus.—Large red flower; an abundant bloomer; habit of plant, close and compact; an excellent kind for grafting upon the stronger growing varieties, the stems of which should be from twelve to eighteen inches in height.

Azalea, Admiration.—One of the most beautiful varieties in cultivation. Color pure white, flaked with bright carmine; an early and abundant bloomer.

Azalea, Ardens.—A splendid bright orange scarlet, of a most beautiful texture; habit of plant free and upright.

Azalea, Criterion.—Salmon pink, with a distinct margin of pure white, and beautifully spotted, with crimson in the upper segment; extra fine.

Azalea, Glory of Sunning Hill.—This is not a new but is a beautiful variety, and wherever two azaleas can be grown, this should be one. Color of flower a fine rosy pink and very double, well filled up to the centre when well grown; habit of plant very good.

CULTURE OF POINSETTIA PULCHERRIMA.

BY JOHN HOWATT, PITTSBURG, PENNSYLVANIA.

THE following has been my mode of growing the Poinsettia Pulcherrima for the last two years, and, according to my opinion, with the best possible success. I have read in many publications of the day various statements of its management, and have not yet seen good specimens of it. The Poinsettia is a fine old plant, introduced from Mexico about 1834. Its true flowers are a mere nothing, but the floral leaves that surround its flowers at the point of the young shoots, are of the brightest tints, and on this account the plant is much admired. Another fact enhances its value—it comes into beauty for the greenhouse when other plants are out of bloom. The Poinsettia has its faults and failings; it is decidedly of a bad habit, and this probably prevents many bestowing that particular attention the culture of the plant requires.

The two extremes of heat and cold I have seen resorted to. Some say bottom heat is necessary, while others declare the contrary. One writer will say place it in the stove, others that stove temperature frustrates the end in view; others, again, that a greenhouse is the only situation where we can obtain a stiff, sturdy, short-pointed growth. Amidst all those opinions, perhaps a middle course would suit the purpose.

After the plants are done flowering, cut them down, and the shoots are available for cuttings. These I cut into short lengths, each piece having two eyes. Cut horizontally under the lowest eye or bud. After the cuttings are made, place them on a shelf or any other dry place, for two or three days, to dry. They may then be placed in a pan, or pot, well drained, say two-third broken crocks, over this a little sphagnum, if at hand, then filled to the top with equal parts of silver sand and peat, passed through a fine sieve—the whole pressed into the cutting-pot, so as to give it solidity, and exclude the air from the base of the cuttings. The cuttings to be inserted about one half their depth, plunged in a brisk bottom heat and shaded from the sun. They will root in from four to five weeks, when pot them off into three-inch pots; one in each pot. Keep warm and moist until they have taken in the fresh soil; they should then be gradually exposed to a situation where they will have the benefit of more air, with all the sunshine you can give them, and still they require to be kept tolerably warm; syringed in the afternoon when the weather permits. As soon as they have comfortably filled their pots with roots, prepare for their final shift. I would recommend loam two parts (fibre if possible), peat one part, rotten dung half part, and as much sand as will make the compost appear greyish; a portion of brick rubbish, to keep the whole open and porous—eight-inch pots

for their final shift. Get as many of these together as your demand requires, drain them carefully, taking the precaution to have a good outlet for the water; on this much depend the health of your plants.

Bring the plants to your potting bench, and place five of your plants in one of your pots, previously prepared; one plant in the centre of your pot and four round the edges; being so situated that the fresh compost will cover an inch of the ball, each one inch deep. Be careful to fill up all the crevices around with fresh soil. In this way proceed until you have the desired number of pots filled; place them in the warmest part of the greenhouse. If placed in the stove for a few days it will be advantageous to them, as it causes them to shoot once more into active growth. For those who do not command a stove, a greenhouse will answer, by placing them first in the warmest part of it, and gradually introducing them to more air and light. Be careful and avoid much water after repotting. Water with a fine rose for a few days, until the plants begin to make root, when water may be increased as they get established.

Place a neat stick to each shoot, the centre one upright and the others leaning a little outwards; to these fasten the shoots as they advance in growth, but on no account stop them. In the fall they are kept much drier and more airy than in summer, which causes the wood to ripen well, and, as a consequence, they will flower most beautifully in the winter months. Cut down the following spring to one eye. There are several invisible buds round the base of each shoot; they will probably push in many places. When this is accomplished, turn them out of the pots, gently removing a portion of the old bulb or soil. Be careful not to break up the old bulb. Place them in ten-inch pots, using some compost, as previously recommended. Treat them as in previous seasons, and I will venture to say the cultivator of them will be richly rewarded with good specimen plants—if not as single specimens, at least with a clump of the Poinsettia which will attract the eye.

THE GRASSHOPPERS IN MINNESOTA IN 1856-7.

THIS destructive insect appeared in vast devastating numbers in '57, east of the Mississippi, and there is but little doubt that the cultivator in the states south and east, at least in parts of those states, must suffer from their ravages. Facts derived from the experience of one who has suffered not a little from their devastations may be of some value.

The writer is little acquainted with the correct scientific name of the grasshopper, or a technical description of it. Some good authorities mention it as a species of locust. If it is really that dreaded insect, and no means can be found to destroy it, inconceivable loss must fall on those sections where it alighted last fall. About the middle of August, 1856, the papers at St. Paul noticed the mischief the grasshoppers were doing around Sauk Rapids, some fifty miles from the falls, up the Mississippi. A short time after that a swarm of them reached the Minnesota. They were described as flying high in the air, and alighting on the ground. Though vegetation was well advanced to maturity, they did considerable mischief to potatoes, buckwheat, corn, &c. During September they laid their eggs in the ground, and it was not until the weather had set in very cold that they were destroyed. It is said they have been very mischievous in the Red River country before they appeared here; but where they originally

started, is, for the most part, a matter of conjecture. Their course, so far, has been nearly a southerly one.

During the warm weather of May, 1857, the grasshoppers began to hatch out in immense numbers, the soil seeming to be fairly alive with them; particularly was this the case in plowed land. No kind of weather affected them; whether the thermometer ranged 60° to 80° in the shade, or there fell cold, heavy rain for several days, or there came heavy frost, it was all the same, the young ones hatched out and commenced their destructive career. It would have been supposed that the extraordinary cold of the preceding winter—at one time an extreme of 43° below zero—the unusual cold and frosty weather of May, the very heavy and cold rains about the first of June, would have destroyed them. During June they committed much injury on the grain crops, but of the gardens and vegetables they soon made clean work. The grasshoppers seemed to have a particular liking to vegetables; where they commenced pretty strong on a garden one day, by the next not a green thing would be left. Not a vegetable escaped, excepting only peas, beans and some of the coarser vines, and these only where they were thickly sown. In sections further north, where they appeared in larger numbers than here, they cleared off the crops as they came up; but here, until the beginning of July, there was a fair prospect of securing some crops; but then they appeared in such increased numbers, that actually in two or three days they ate off whole acres of wheat in head. They seemed to work in swarms while they were committing so much mischief here. The farms a mile or two east were not injured. In July the grasshoppers got wings, and about the middle of the month they commenced flying southward in vast swarms. During the warm part of the day, looking toward the sun, as far up as one could see, the air was filled with them. By the middle of August they had all disappeared. The only safety for vegetation of any kind seemed to be in *early* and *thick* sowing, and of vegetables this may only save the Pea and Bean. It is hard to say where the grasshopper laid its eggs last year, but whoever has been unfortunate enough to be in such sections, the writer can only advise them to get in their crops as early as they can, and to sow and plant heavy.

MINNESOTA.

BATCHELOR, OR KING APPLE.*

BATCHELOR, or King Apple; fruit of the largest size: roundish, broader at the base, a little flattened; skin, lemon yellow, washed with lively red on the sunny side, sometimes obscurely striped with the same and sparsely sprinkled with greyish specks; calyx, small, open in a rather deep basin; stalk, usually very short, thick, and inserted in a moderate regular cavity, which is often russeted; flesh, white, tender, fine grained, juicy, and of a most agreeable sub-acid flavor. Ripens in October and November.

This magnificent fruit originated in North Carolina. The description above was taken from fruit furnished at the same time with the drawing, by J. Van Buren, Esq., Clarksville, Ga. I have known no better apple in its season.

WM. N. WHITE, Athens, Ga.

* See Frontispiece.

FRUITS OF THE SEASON.

BY RUSTICUS.

RAMBLING notes are found to be the most useful and informing ; hundreds of people who visit gardens walk with their eyes directed to the gravel, and ten chances to a quarter of one, they will be engaged in telling you the history of a cherry or pear tree in their grandfather's garden, when you are trying to show them the novelties of the day. You must just "give it up;" remember that the masses never read the *Horticulturist*, and be content to pass your favorite plants and fruit in silence. Such a visitor will go home quite satisfied that he has shown a great deal of knowledge, though he has really escaped learning anything whatever. It is a rare *talent*, and one which when found, to be greatly esteemed, to be able to go through *another's* garden with open eyes. The chances are that your conductor has something to tell : do not interfere with his information if you go to *learn* ; let *him* talk instead of telling him you robbed an orchard when at college, or giving your reminiscences of how strawberries, &c., tasted to your youthful appetite, and you may go home wiser than you came.

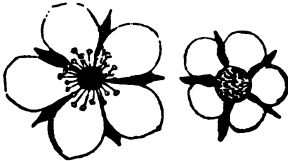
FIG. 1.
STAMINATE.FIG. 2.
PISTILLATE.

FIG. 3.—STAMINATE FLOWER MAGNIFIED.



FIG. 4.—PISTILLATE FLOWER MAGNIFIED.

I am under the impression, Mr. Editor, that some people yet exist who would be glad to know the difference between pistillate and staminate strawberries. As soon as they do understand the difference they will be able to read the books with some chance of practicing their directions. I therefore propose that you make the above drawings into wood cuts.

Figs. 1 and 2 represent the usual appearance of pistillate flowers, figs. 3 and 4 magnified portions of the same ; fig. 3 exhibiting a part of the flower of the Large Early Scarlet Strawberry, and fig. 4 the same of Hovey's Seedling ; *a* being the stamens, and *b* the pistils. By the use of a microscope, it will be found that the former is abundantly supplied with pollen or fertilizing dust, while the latter is nearly destitute. Hence, Hovey's Seedling or any other pistillate variety, can never, or but very imperfectly fertilize its own flowers, and the impregnation must be derived from a staminate sort.



NEW ROCHELLE, OR LAWTON BLACKBERRY.

The strawberry, favorite of everybody, will have disappeared from sight, unless in the extreme north, before this can appear, but your journal is eminently one of reference, and will, therefore, I doubt not, be consulted on the above topic by somebody hereafter. Let us come to the blackberry which is not yet ripe. It is now considered an established fruit for cultivation. Coming in at the warmest season of the year, it is very acceptable; but care must be taken that it does not want water. The soil should be rich and deep; a northern or western exposure is good, and a soil inclining to

vegetable mould and light loam is desirable. It is now known that if the branches are trained horizontally they are more productive than when upright. As to other matters connected with this fine berry, and the Dorchester, &c., I can at this date say little that will be new, and therefore ask your engraver to give his aid for the following illustrations.



BRINCKLE'S ORANGE RASPBERRY.

BRINCKLE'S ORANGE RASPBERRY.—By very general consent this fruit is coming rapidly to be considered one of the very best for cultivation; it is a great favorite with amateurs, and is one of those gifts to man, of hybridization, which will always make Dr. Brinckle's name a household word. I have always found chippings of leather from a neigh-

boring shoemaker or saddler, a perfect mulch for the raspberry; indeed, I give it no other manure whatever, and by carefully watching the stools that come up every year, and not allowing them to grow too thick, I have crops that are entirely satisfactory.

The Hudson River Antwerp Raspberry is a favorite market variety strongly recommended by those who know its value. It is a large, handsome berry, fruit very firm in texture, of handsome appearance, and very productive. It parts readily from the germ, and is by some called the New Red Antwerp. Rather of a dull red, with a slight bloom; not very juicy, but of a pleasant



FASTOLF RASPBERRY.



HUDSON RIVER ANTWERP RASPBERRY.

sweet flavor. The Duke of Bedford is said to have paid a guinea for two plants.

The Fastolf Raspberry was the favorite of your friend Downing, and it still holds its own in the opinion of very good judges. It is an English variety of high reputation at home, as well as here. It derives its name from having originated near the ruins of an old castle, Fastolf, near Great Yarmouth. Fruit very large; obtuse, or roundish conical; bright purplish red; rich and highly flavored, slightly adhering to the germ in picking. Canes strong, rather erect, branching; light yellowish brown, with few pretty strong bristles.



DOWNING'S SEEDLING GOOSEBERRY.

Downing's Seedling Gooseberry, the largest yet known, being about twice the size of Houghton's Seedling, its parent. Pale or light green, without any blush,

and smooth. The skin is very thin, and the fruit as delicate and tender as any European Gooseberry in its native soil. The flavor and aroma are perfect; sweet with plenty of vinous subacid. The first describer says: "I experienced the same satisfaction as I did in tasting the Delaware and Rebecca Grapes. It comes up to the best English varieties in our very different climate."

CONFESSIONS OF AN AMATEUR.

I AM confident that my own experiences have their counterparts, and am willing to expose myself for the amusement of your readers. Not that I am utterly a "Know-nothing" now, but I have bought what little I do know so very dearly that perhaps I may tell others to their advantage how I began, failed, grew wiser by experimenting, and at last got "a pretty fair crop" out of my errors.

I was "a citizen of credit and renown," as John Gilpin was, but my mother had taken me to her garden-beds when I was a boy, and I had often revelled in our watermelon patch, at our summer house. From that time, however, I was immersed in city cares; my chief knowledge of the country was derived from a visit to Coney Island, or a walk in the sand at Saratoga. Suddenly my early teachings broke out into a violent attack of country fever; I read everything I could purchase relating to trees and gardens; I formed a glowing picture of the delights of rural life, and determined to put in practice what I had so carefully learned.

I made excursions to every place advertised for sale within a reasonable distance, and thus visited several neighboring States. Prices for land were high, but at last I fixed upon a site by the advice of a knowing country gentleman, aided by the views of my wife, who had an especial eye to a hill upon which to build, and from which there was "a view of the city." The country gentleman was my next neighbor; we bore the intelligence that he pocketed ten per cent. on our payments, for recommending the land as "capital for fruit culture," but were entirely alienated from him when he purchased through a third party, my two best imported Alderney cows, at less than cost, after having declared them quite a worthless kind.

Before taking possession I ordered from Angers, France, a huge invoice of fruit and ornamental trees; consulting all catalogues within reach. My spouse is a great admirer of hedges, and having imbibed an admiration of Parisian fashions during her education in that capital of taste, we together selected the beech as the best hedge plant, and imported them by thousands. They came in good order and were planted in the best, and of course, the most expensive manner. Next spring, what was our disappointment, to find all the old leaves hanging on the plants, while all nature around was revelling in the garb of May! It was too bad—they were certainly *all dead*. My gardener had unfortunately died during the winter, so Patrick and I rooted the beeches nearly all up, and planted hemlocks from the woods. A few had been left standing, and what was my mortification and that of my wife, to see these revive in all their beauty, just two weeks after we had made a bonfire of their fellows! But that was not the worst of it. Either Patrick or I, or both of us, had neglected the proper way of taking up our hemlocks, or in planting them, or something had gone wrong; Patrick suggested "ground mice," but it seemed to me these vermin could hardly have

eaten the roots of so many thousands of trees, and left one here and there to mark our well run lines ; these are now making "single specimens" slowly enough, and my hedges are yet only in my ledger.

This was bad to be sure, but was as nothing to my garden experiences. Trimming and pinching I had studied before leaving Wall Street, and I understood it, (in theory,) at least, as I thought, thoroughly. My Angers pear trees, on the quince, were looking very well ; the pinching for two years had brought them into fruitfulness, and I set to work to trim them according to rule. Patrick had wormed himself into my good graces by having a hand and head ready for all kinds of work, and together we trimmed, Patrick at the root and I at the head ; he with a spade following close upon my heels ; as I finished letting light and air into the top and reducing the branches, Patrick came along with a sharp spade, which I was surprised kept him half the time to grind and whet ; he shoved it into the roots with a will that satisfied me of his knowledge and good intentions ; together we made rapid work, and then Patrick filled the holes he made with guano. We burned the brush in good time, and manured the roots with the ashes. I built at once a fruit room for the pears, according to a model I had cut out of an agricultural paper.

The dinner, on trimming days, was something to remember ; such an appetite, followed by such increased admiration for the country, that my wife really thought I had gained ten pounds in the few weeks we had ruralized. I *know* that during that period I had remitted to England two hundred *pounds* sterling, for a ready made orchard and grape house, having been already deceived by my architect in several buildings he had put up. But no matter ; *my pear trees all died !* Patrick said I had trimmed the tops too much, but I knew better, and discharged Patrick because he had cut all the roots off close to the butts. The neighbor who bought my Alderneys, said it was the guano put in too strong, and I was obliged to buy his fruit, or go without any.

My trimming did not seem to succeed ; I have cut all my box-trees, as directed, shearing them down to two and three inches in height ; I shaved down the *Pyrus Japonica* likewise, and lopped all the *Spireas*, as if I remember, directed by Mrs. Loudon ; thus had few flowers from these favorites ; but no doubt they are like fruit trees, and will be beautiful *for my successor* for to tell the sequel, my wife and I had no asparagus worth eating, even the second spring ; our celery would not pass muster in Dr. Kane's Arctic regions, our butter was always worse than "tub," and we have got back to town lighter in weight by many *pounds*, our pockets emptied, and request you to direct your publisher to *stop the Horticulturist*. Would that I had never seen it, or thought of the "Woodpecker tapping the hollow

BRECH TREE."

AMARYLLIS.

THESE beautiful bulbous plants will be found to repay the grower who has heat at command. My way of growing them is to give alternately a season of excitement and a season of rest. To do this, they should be abundantly supplied with water, and kept near the glass, when coming into flower. When the blooming season is over, water should be gradually administered till they have done growing. The bulbs intended for blooming should be repotted about the beginning of February, into sandy loam and

peat soil, placing them in a stove or hotbed, where the temperature is from sixty to seventy degrees. Water should be plentifully supplied. Those amateurs who can find convenience for growing the *Amaryllis* will find these remarks useful. B.

SEA FLOWERS.

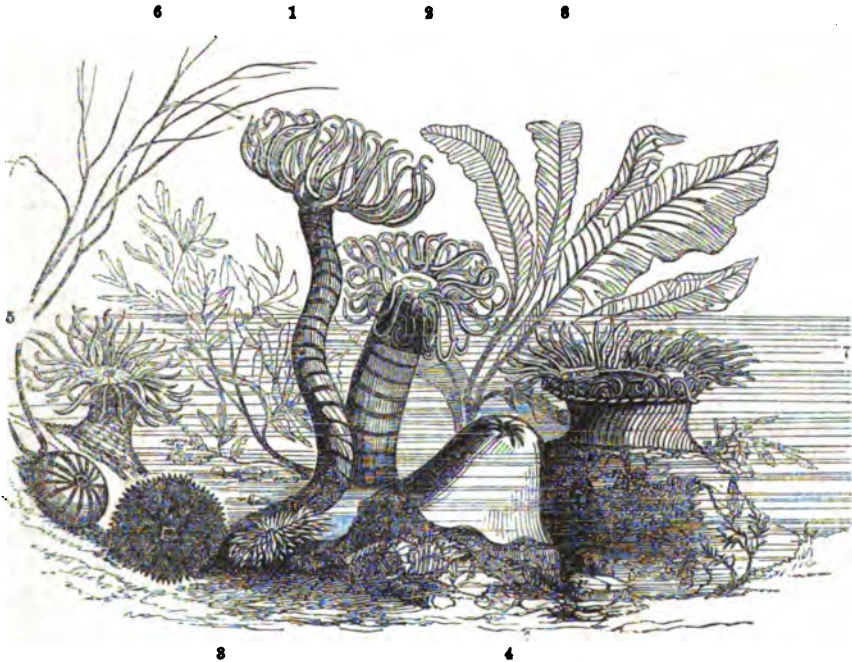
THIS cold weather is rather adverse to the full enjoyment of water scenes, and to talk of shoal gatherings, and brook dragging, might make delicate folks shrug their shoulders ; but I find it very agreeable to stir the fire with one hand, while with the other I point my friend to a pretty collection of sea flowers, lately fished for me on the French coast. Lovers of the aquarium should know that the available stock is no longer confined to the species indigenous to our own shores, and it may be a bit of welcome news, if I here make known one of the plans now adopted for securing specimens from other coasts. The idea originated with Mr. Hall, of London Wall, who opened a subscription list, to which all subscribers of a guinea were entitled to a guinea's worth of foreign gatherings. With the subscriptions in his pocket, and a pair of water boots on his legs, Hall steamed away, and at last found himself treading the sands on a chosen spot of the French coast, where *Actinia* abounds. With a plentiful gathering he returned, and at once distributed to his subscribers a proportionate number of specimens, in liquidation of their subscriptions, and my share of the booty has been delighting me for six weeks past, and it is with no small pleasure that I contrast their novel forms and colorings with those from our own coasts, and from which they differ much more than might have been expected. Bright orange and amber, delicate opal, or intense snowy white, are the predominant colors ; and although it is easy to detect in many the closest possible alliance with well-known species, of which they are but delicately-colored varieties, others have such distinct characteristics, that it cannot be doubted the lists of species admitted to our tanks will soon be considerably increased. When Mr. Hall goes off to make his next gathering, I purpose making arrangements with him, with a view to determine the genera and species distinctly before the gatherings are distributed, and if we can get him to push on to the Mediterranean this summer, we may, in our aquarium studies, manage to keep pace with the horticultural world ; the glory of which is its bold ignoring of both latitude and longitude, in the appropriation of specimens for culture.

Sea Anemones are the kinds of stock which take precedence in the culture of the marine aquarium. There is much certainty attendant on their preservation, immense variety, as to their forms and colors, and they admit us to their own peculiar region of Protean changes, so that we never fatigue of observing their habits, or admiring their changing beauty.

In the subjoined cut are represented four of the best *Sea Anemones*, whether for a beginner or an adept. In the richest collection the common "Mes," or *Actinia mesembry anthemum*, is as valuable as the rarest, on account of its intrinsic beauty, and as to hardiness and longevity, no creature of the deep, ever yet brought within domesticating influences, can equal it. When all goes wrong, and the pretty creatures drop from their stony pinnacles and perish ;—when the water gets putrid, and, perhaps, half a dozen degrees of specific gravity too dense—"Mes" will still be found

alive and unhurt, and will display its coral fingers and bright blue beads the moment he is lifted into a purer element. This is known by many popular names, of which the most common is "Strawberry Anemone," for the most plentiful form of it is that which strongly resembles, when closed, a well-grown *Sir Harry*. But it has so many varieties, that for mere effect this species is, in itself, sufficient for a small tank. In its most common form it is spotted on a crimson ground, strawberry fashion; in another it is of a deep maroon, without spots. There is another variety of a deep quiet chestnut; another of a dark olive green, and a rarer and exquisitely beautiful one of a very bright, almost grass, green. I have sometimes managed to get one or two specimens of each of these varieties together at the same time, and by a little manœuvring to have them all expanded, side by side, and their distinctness and variety had a most charming effect.

But there are other reasons for commencing the study of marine objects with the well-known "Mes," for its habits give us the key to the general management of collections, and its anatomy illustrates the internal con-



struction, and physiological economy, of the whole class of Zoöphytes. Take a plump "Mes" that has not been handled, or in any way ill-used, and cut him clean in half, vertically, and drop each half into a vessel of fresh sea-water, that has been agitated well; throw in also a tuft of *Ulva*; leave the divided victim alone for a week in a very partial daylight, and you will be surprised to find, that each division has become a perfect animal. Then either lift out the specimens into fresh sea-water, or draw off the water they are in, and agitate it in the open air, and return it quickly, and each will at once expand, and present as perfect a shape and arrangement of parts, as

if their several origins had been distinct, and no relationship existed between them. The experiment illustrates the nearness of this tribe to the vegetable kingdom, and justifies the collective term Zoöphyte, as applied to the various divisions of this lowest section of the animal kingdom.

One very striking characteristic of the sea flowers, is their capability of changing their forms, and this is in no species so powerfully exemplified, as in *Sagartia anguicoma*, of which there are three specimens, in different stages of expansion, represented in the cut. This is a most valuable aquarium species, and may be preserved for almost any length of time, if properly tended. It has one bad habit, and that is, that it will frequently let go its foothold, and lay prostrate on the pebbles, so that the slightest agitation of the water may spin it into some crevice among the rockwork, or send it bouncing against the glass sides. Its coloring is very quiet, grey, buff, pale brown, and opal white predominate; and the markings of the disk are generally pleasing and delicate. Its long flexile tentaculæ catch the eye of the most indifferent observer, and the patient watcher finds his reward in its many extraordinary changes of form. When you receive specimens packed in wet sea-weed, they are like little buttons of dirty white gelatine, but in less than half an hour after you drop them into the tank, they throw up their tall stems, and expand their long delicate tentacles in most various ways, so that among fifty specimens, there will not be two alike; and yet in every stage of presentation, there is not the slightest difficulty experienced in determining what they are. Sometimes they take it into their heads to lie full length altogether unattached, now contracting themselves to a mere pimple, then blowing out the disk, and contracting the base, and at other times assuming a regular spiral form, like a fleshy corkscrew; but the tentacles are almost always expanded, be the shape of the creature what it may.

The base of an Anemone, which corresponds very closely to the organ of adherence in a snail, or periwinkle, is the most delicate part of the whole structure. Though hard and leathery, in some species almost horny, it must never be in the slightest degree injured; like Achilles, the most vulnerable part of an Anemone is the foot, and though most species take little note of a few tentacula, and will even mend a hole in their jackets if an accident occurs to them, an injury to the sucking base is pretty sure to prove fatal. When first introduced to the tank, Anemones usually lie on their sides for a few hours, though they generally expand the disk at once; after a while they get hold of whatever their base is nearest to, and if they are healthy, they soon hold tight, and have little disposition to move about. In a vessel now before me, there are nine out of twelve Actinææ that have not moved the tenth part of an inch during the last six or eight weeks, but a couple of *anguicoma* have been all that while, and long before, perpetually on the move; and one has now ensconced himself in a dark hole which he is endeavoring to illuminate with his splendid snowy stars of moving tentacula. *Bunodes clavata*, here represented, is one that seldom stirs from its original site; and, when well placed to show off its beauty, it conveys to the mind an idea of a flower carved in ivory, by the most cunning fairy fingers. The specimen from which this has been sketched, has been seated on a block of granite since the 10th of December last, and in that time it has perceptibly grown, and appears to increase in beauty every day. It is nearly always expanded, very seldom indulges in contractions, and has a first-rate appetite. But the most perfect resemblance to a true flower, is that presented by *Adi-*

nia bellis, the sea Daisy, of which there are many beautiful varieties, all of them moderately hardy. This and *Clavata* require the water to be kept very pure, and well aired; a few days' neglect of the vessel may result in their death, and the demise of one specimen, if not detected in time, may lead to the ruin of the whole, and a general break up of the collection, so that those who desire to enjoy the presence of these rare sea flowers, must be vigilant in their attentions.

The numbers on the cut refer to the specimens as follows:—1, 2, 3, *Sagartia anguicoma*, or snaky-locked Anemone, in three different states, the last being shrunk up; 4, *Bunodes clavata* in its ordinary force of expansion; 5, the common "Mes" expanded, and closed; the row of heads resembling torques which surround the tentacles, is peculiar to this species, and adds vastly to its beauty, especially in the rose and coral-colored specimens; 7, *Actinia bellis*, the sea Daisy; 8, the lovely red *Alga delesseria sanguinea*, drawn from a very fine specimen; the plant on the other side is *Furcellaria fastigiata*; 6, one of the few purple Algæ that may be preserved in small collections.—S. H., in *Gawenas Chronicle*.

DWARF PEAR CULTURE.

BY JOHN B. EATON, BUFFALO, NEW YORK.

MR. ALLEN's recent article on this subject, it is to be expected, will create an awakening among the advocates of the quince stock. I observe, indeed, that one of the Cincinnatians is already aroused in its defence. I am a neighbor of Mr. Allen's, (although some miles distant from his *orchard*,) and have for several years had charge of one of the orchards to which he alludes, as having been planted nearly at the same time as his own. As I do not quite agree to all his propositions, (or rather conclusions,) I will give my "experience," as he has done.

My late father was the pioneer in the culture of dwarf pears in this vicinity; he having purchased and planted in the autumn of 1844 upwards of one hundred and thirty pears, most of which were dwarfs. At that time there was but a single dwarf tree in the neighborhood, which had not, I think, then fruited.

The trees gave indications of succeeding well and fruiting abundantly; and their numbers were annually increased by successive plantings until they formed quite a respectable collection, embracing at one time over four hundred trees, and more than one hundred varieties, chiefly on the quince. The grounds containing a diversity of soils and exposures, a difference was soon perceptible in the growth of the trees; and on a gravelly elevation in particular, it was extremely difficult to *force* them to grow, and they would not be *coaxed*. In fine, we have had a varied experience, somewhat resembling Mr. Allen's in its principal features, but far less discouraging, and wanting the fatal termination of his. Very many of the trees have done *well!* done *very well!* while many again have died. A large number perished with the blight during two or three years; but of late it has quite disappeared. Quite a number failed from some cause which I could not at first determine, but afterwards satisfied myself that it was from being worked upon an unsuitable stock, probably the common quince.

After thirteen years' experience, I am satisfied that dwarf pear culture

can be made profitable ; but that it requires the following conditions in order to make it so : The *soil* must be strong and rich, and kept in good condition by manuring. It must be well cultivated, and not laid down to grass. The trees should be planted as closely as possible—say six by twelve feet apart—and they *must* be pruned. If not carefully pruned once or twice each year, they will undoubtedly run to wood instead of fruit ; and not only *that*, but their heads, instead of branching at one or two feet from the ground as they should, will be at standard height, and the trees being *top heavy* will be continually blowing out of the ground, requiring an infinite quantity of labor and trouble to keep them in an upright position.

As Mr. Rivers well expresses the idea in his last article, "it should be strictly a pear *garden*, not a grass *orchard*," and in this nutshell lies much of the truth of the whole matter.

Of the six pears which Mr. Rivers selects, I should not place much reliance upon either Beurré d'Amalis or Vicar of Winkfield (or Le Curé) ; having rarely eaten one of the former which was of *good* flavor, and *never* one of the latter which was more than *passable*.

I have much confidence in Louise Bonne, Beurré Diel, and Easter Beurré, but do not consider Duchesse d'Angoulême as always reliable, although from its magnificent size and fine flavor, one can afford *sometimes* to have but a few specimens.

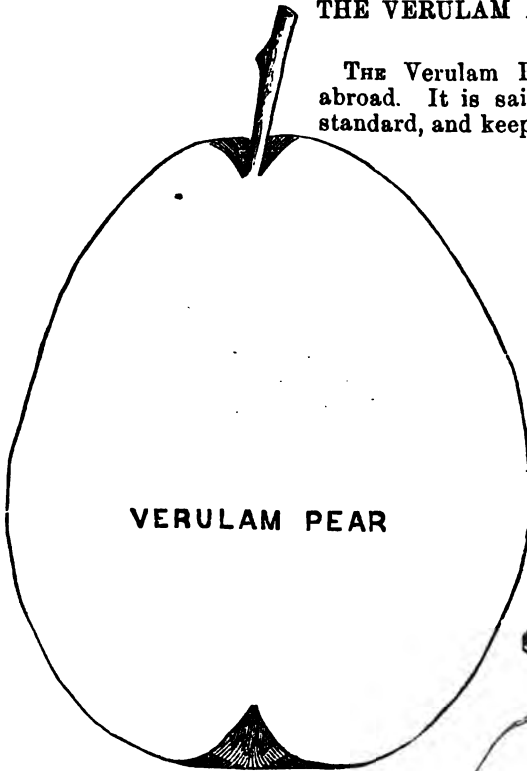
I should add to the above list with great confidence, Belle Lucrativé, and Surpasse Virgalien, both of which are of the highest flavor, and, so far as I have seen, good bearers.

If I were now to plant a pear orchard, I should arrange the rows in quincunx order, ten feet apart ; placing *standards* at intervals of about fifteen feet, filling the alternate spaces with *dwarfs*. I would prune *every* one of them rigorously in pyramid form, until the standards encroached so much upon the dwarfs, as to render the removal of the latter expedient, when the former might be allowed to grow more at large. In this way, I have no doubt that, by selecting varieties judiciously, a fine return would be made to the planter.

APPLES AND PEARS.

BECAUSE an Apple is very large it does not follow that it is also very good ; therefore great size alone should not be made the criterion of merit. As regards Pears, in deciding between competing varieties we ought to take into consideration all their merits and demerits, and not found our decision upon a single property. According to this rule, then, the Seckel cannot be considered a better Pear than the Beurré Diel or the Duchesse d'Angoulême. Judging by flavour only, the Seckel certainly stands first, but there are other points to be looked at, and of these size is of some importance, especially when the difference between the competitor is so great that a well grown fruit of one would cut up into half a dozen respectable specimens of the other. Then, again, we should look at their respective periods of ripening. The Seckel comes into use at the same season as several superior sorts—the Jersey Louise Bonne, for instance—while the Duchesse d'Angoulême usefully succeeds the Marie Louise, and the Beurré Diel ripens still later, when Pears are much less plentiful. Besides the latter is a really good Pear when grown on standard trees and in a soil that suits it.

THE VERULAM AND GRAND BRETAGNE PEARS.

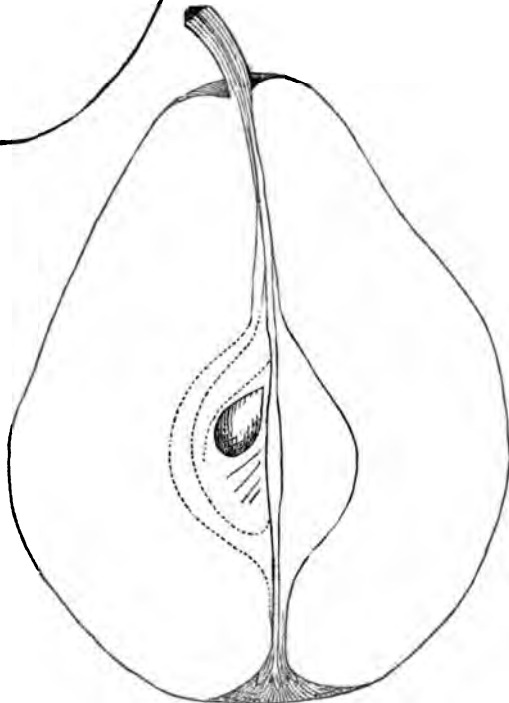


THE Verulam Pear is coming into favor abroad. It is said to be a sure bearer as a standard, and keeps till late in the spring. It is much valued for its stewing qualities. A fine red tinge to stewed pears, the housekeeper says, is indispensable, and it is a pretty positive assurance of the presence of sugar in abundance; the addition of large quantities of sugar or syrups to pears, to a considerable extent, destroys their natural flavor. The Verulam, when stewed, becomes red without the necessity of contributing coloring matter, and is quite equal to the pound pear for the cuisine.

Mr. James Snowden has

a winter pear which he thus describes :

THE GRAND BRETAGNE.—The *Grand Bretagne* in exterior appearance bears a marked resemblance to the *Beurré D'Anjou*—indeed, so strong is the likeness, that were it not for the lateness of its maturity, one might believe it synonymous with the latter kind. The tree grows stout and vigorously, with dark, yellow shoots, which stand very erect. This valuable property will much enhance it in the estimation of nurserymen, who are rapidly losing all conceit of trees that form tortuous branches, as they sadly disparage the profits of their products.



GRAND BRETAGNE.

The *Grand Bretagne* is of the largest size ; *form*, obtuse, obovate ; *skin*, greenish yellow, with russet dots just perceptible ; *stem*, half an inch in length, and quite stout, inserted in a moderately deep basin ; *calyx*, open with flaring short segments, exposing a tolerably deep hollow ; *flesh*, fine, juicy, buttery and melting ; core, small in comparison to the size of the exterior flesh surrounding it ; seeds *plump*, and but few in number ; ripens latter part of December and latter part of January, preserved in a cool room.

THE VINE DISEASE.

A GREAT deal is written and published in Europe regarding the disease of the vine and potato. We have been attracted to a letter from Mr. John Malam, an Englishman, addressed to the Portuguese, French, and Spanish ambassadors, in which he says that as coal tar is one of the constituents contained in coal, which latter is of vegetable origin, and having been received from the atmosphere and soil as food for plants ages ago, I conceive it to be a very natural food for vegetation at the present period. The antiseptic, carboniferous, and ammoniacal products, distilled from coal, appear to me to be far better calculated to conduce to a healthy growth of plants, than the putrescent, fœtid, nauseous, undecomposed animal and vegetable matters in use at the present time, which latter favor the attacks of fungi and insects. Coal tar being practically destitute of nitrogen, promotes a supply of carbonic acid to the roots of plants, whilst the other product, gas water, is very valuable as a manure, especially for cereal crops, from the nitrogen supplied by it to vegetation. I have found by experience, coal tar, mixed with farm-yard and stable manure, very beneficial for oats, melons, cucumbers, &c., and when dug into the rows before planting potato sets, a prevention to the disease. It is a singular fact that the antiseptic properties of volatile hydro-carbons of coal tar have, in numerous instances, not only prevented the ravages of the vine and potato diseases, freeing the former in vineries from red spider, but have also prevented the ravages of cholera.

A Mr. Dido lately pointed out the absence of the *Oidium* on vines, the wood of which has been smeared over with coal tar. M. Sandette proposes a simple and inexpensive preservative, which proved successful in some experiments made during two years in the neighborhood of Bordeaux. In order to prevent and arrest the development of the *oidium*, it is sufficient, three weeks after pruning the vine, to smear the stem and shoots with liquid tar, applied with a brush. This operation costs very little, and has proved very successful on all plants in which it has been performed, even although they were in the midst of infected vines.

The writer thus concludes : I believe all antiseptics to be beneficial in neutralizing the effects of an excess of ozone ; the flowers of sulphur, on this principle, are useful in arresting the ravages of the *oidium*, owing to the antiseptic properties of the sulphurous acid given off by them in a vitiated atmosphere being converted into sulphuric acid by the ozone. Gas tar not only contains antiseptic properties, but is also calculated to supply the plant with proper food, thereby rendering it healthy enough to bear, without injury, any vitiated state of the atmosphere. As the fungi on the diseased parts of the vine might be prejudicial to them if put in the soil near the

roots, I would recommend all the diseased parts, when removed, to be burned, and the ashes dug into the soil.

In conclusion, I consider it the duty of all vine cultivators to endeavor to get at the root of the matter, and ascertain what is the predisposing cause of the disease in the vine, as no external application can effectually afford a cure. I should again recommend, then, that antiseptic manures should be dug into the soil, such as wood ashes (which contain potash,) gas tar, also doghead charcoal, lime, &c. ; and the use of all putrescent animal and vegetable manure be abandoned, in order to restore the vine to its original state of health and natural productiveness.

NOTES FROM IOWA.

BY E. H. COCKLIN, CEDAR VALLEY, BLACK HAWK CO., IOWA.

THINKING that a few hints on the natural productions of Iowa may be interesting to your numerous readers, I propose making a few remarks on the wild fruits, and some of the most important forest trees of Northern Iowa. The Wild Plum abounds, and is found everywhere, interspersed with groves of crab apple and thorn. The varieties are numerous, representing every variety of shade and color, and in size from an ounce leaden ball to the dimensions of the Green Gage. Some possessing the astringent qualities of the Persimmon, and others—the largest and finest—having the exquisite flavor of the Imperial Gage. The season of ripening is equally various. The earliest variety, which is most abundant, is red ; about three-fourths of an inch in diameter, and perfectly round. They usually command seventy-five cents to one dollar per bushel in the towns. The plum crop the past season was almost a failure, owing to cold rains during efflorescence. The little "Lark" here too commits his depredations, but not to any great extent. In some places the trees are badly affected with the "black knot."

Gooseberries of a purplish color abound, but drop off as soon as ripe, and are not of high flavor. A variety of the Black Currant grows in moist situations. It is of inferior quality, and is subject to a kind of mildew blight. It makes an excellent stock for grafting the cultivated varieties upon. It makes an ornamental bush if properly trained. Two varieties of raspberries abound : the Red and Black Cap. The latter is almost worthless when they grow in the thinly timbered districts. In point of flavor, they form no comparison with the old and well-known varieties of the Black Cap, that replenished the fence corners in the East. The Red variety is much larger, and more abundant. It is profusely spread over the prairie adjoining the timber. It is early and worthy of cultivation. Strawberries are found in most situations. There are two varieties : one being much more acid and of more conical form. The forest trees are not numerous. The Sugar Maple, (*acer sacharinum*), and the White Maple, (*acer eriocarpum*), are abundant in some localities. The Box Elder, or ash-leaved maple, (*acer negundo*), is also found. It is a beautiful tree, coming out in leaf in early spring, before any other, its location is easily distinguished. The Butternut, (*juglans cinera*), and Black Walnut, (*juglans nigra*.) The Cottonwood, (*populus Canadensis*), is everywhere found along the streams. In adjacent districts, when the soil is overturned, the surface in a few years is covered with the trees where the seeds have been wafted by the winds. The Aspen, (*P. tremulus*),

whiten the woods in many places ; the Black Ash, (*Fraxinus quadrangulata*,) and Blue Ash, (*F. sambucifolia*,) The Oaks form a prominent part of the wooded district, the principal of which are Red Oak, (*quercus suber*,) and Brier Oak, as it is here called. The White Oak, (*quercus alba*,) is seldom met with. The Quercitron, black or yellow oak, (*Q. tinctoria*,) is mingled sparsely with the rest. Amongst the hickories, the Pignut is most numerous. The Shagbark hickory, (*carya alba*,) is also found. The Basswood, (*Tilia Americana*,) is abundant, and is everywhere found. Of the Elm, (*ulmus*,) there are several varieties. The Hackberry, or Purple Ash, (*celtis crassifolia*,) is peculiar to the Western States, and attains a large size on some of the Western rivers. The Red Cedar is found on the banks of the Cedar River, from whence the name is derived. The shrubs and plants are numerous. Flowers of brilliant hues adorn the Prairie.

GRAPES.

BY W. T., GERMANTOWN, NEW YORK.

YOUR correspondent Mr. Miller, in the June No. of the *Horticulturist*, speaks of visiting some vineyards in Berks Co., Pa., and says in substance that those vineyards which received the least care produced that year the best grapes ; that they were the freest of the rot and mildew, and intimates that we prune and care too much for our grapes.

Beware friend Miller, what you say, as this is bad doctrine, and I must beg leave to differ with you ; as such treatment would not produce good grapes in New York, and I doubt if it would for a series of years even in Pennsylvania.

As regards the point where the fox flavor begins or ends, I am not *connoisseur* enough to say ; but in my youthful days I have spent much time in hunting in forests and swamps for fox grapes, and have feasted on them to my heart's content, and "desired nothing better," for in those days the Isabella and Catawba were almost unknown in this locality.

But in this age of progress when we have so many choice kinds of Native grapes, it does to me seem strange that any one acquainted with the better varieties should retain a fondness for the wild grape ; perhaps you have better kinds in Pennsylvania than we have here.

I believe that no one here ever succeeded with a vineyard unless he trenched or dug large and deep holes. Where the vines are a good distance apart, the latter way is perhaps as good as any and less expense.

The largest and oldest vineyards in New York, are at *Croton Point* ; the soil and subsoil is a porous sand, yet they trench two feet deep and work in composted manure, &c., &c., and plant about two feet deep, leaving a depression about the young vine, 6 or 8 inches in depth, which is filled up after it is established. They prune the vine, and thin the fruit with care, cultivate the ground enough to keep down the weeds and grass, and encourage no lateral roots to grow within six inches of the surface ; yet these vineyards produce annually fine grapes, free of rot and mildew.

R. T. Underhill, Esq., in speaking of the last crop, says, "The past season though the coolest and most unfavorable for grape maturing, we have had in twenty years, he ripened his whole crop finely."

In clearing up "hedges," I frequently have had occasion to "dig" out, and in all cases the top roots were the largest and strongest, penetrating the subsoil boldly, no matter what its nature; sometimes they had lateral roots but often none.

This spring I had arranged to take up a lot of about 100 bearing Isabella's; they were too thick in the rows and I removed every alternate one; they are now twelve feet apart, which is about the right distance. Some were planted on a drain which was dug three feet deep and filled in the usual way; these vines were raised from cuttings and always grew finely; on taking them up I was surprised to find the largest and best roots had struck badly to the bottom of the drain, amongst the stones in all directions, the deeply dug subsoil affording them an easy entrance.

Others were planted in large holes filled with good surface soil; they too had powerful roots penetrating far in the subsoil beyond the original hole.

The root of the grape is perhaps more sensitive and liable to be hurt by extreme cold or dry weather, than any tree or plant that we cultivate; hence the importance of using every possible means to encourage it downwards.

I am happy to state that the mildew of the fruit is almost unknown here, and no variety suffers from the rot except Catawba, and he who plants and cares properly for his vines may rely on a crop of good grapes annually.

There is a kind of mildew which attacks the foliage of vines in the nursery, but is not troublesome elsewhere.

I am surprised to learn that you experience so much difficulty in growing the grape in Pennsylvania; being in a lower latitude than we are, I supposed that the climate was admirably adapted to it.

INSECTS.—NO. VI.

BY J. STAUFFER, LANCASTER, PENNSYLVANIA.

THE HAWK-MOTH.

THE Hawk-Moths, or sphinges, are a family of large and robust lepidopterous insects; the caterpillars of which are known as the potato and tobacco worms. Some caterpillars of this family erect the forepart of their bodies, remaining in this position immovably for hours; this singular position suggested the name given it by Linnæus, Sphinx, from a fancied resemblance to the monumental sphinx of Egypt, representing the head and shoulders of a woman attached to the body of a lion. I may be allowed to say that this fabulous figure has its significance, because it commemorates the fact, that the river Nile used to overflow its banks about the time the sun enters the sign of Leo and Virgo. My amateur wood-cut will represent the whole. Fig. A represents one of those Potato-worms, of a pea-green color, minutely lined with a series of small spots dorsally, having eight oblique white striped, with a slate colored shade on each side, over the purplish, oval spiracles, and a black, curved and roughened caudal horn on the last segment of its body.

We frequently find these caterpillars covered with small, egg-shaped cottony bodies, as shown at E, fig. A. Those contain small whitish grubs,

thickened posteriorly, fig. e, enlarged one with its hinged lid, after the perfect insect, F and f, has escaped therefrom. These are a species of four-winged flies, or Ichneumons, of minute size. The caterpillar usually survives until the whole brood, as many as one hundred and fifty of the ichneumons, are perfected, when it perishes. Otherwise, when fully grown, it enters the earth, casts its skin, and becomes a chrysalis like fig. B., of a light-brown color, remaining in the ground during the winter, below the reach of frost; the slender tongue case, like the handle of a jug, encloses the tongue extended and doubled back. Such chrysalids are frequently dug up early in June, in our potato patches; but how they manage to work out of the ground is not so plain. From a specimen dug up when laid in the sun, we can witness the bursting of the shell, the escape of the insect, weak and moist, with its crumpled and placid wings, gradually drying, and



The *Sphinx quinque-maculata* and Ichneumon Flies.

essaying to coil up its long tongue and extend its wings, which in the course of a few hours it accomplishes, and it is prepared to take wing. The wings are beautifully marbled, with black and silvery white lines and spots on a warm gray, ground color, expanding four to six inches; the robust abdomen has five orange-yellow spots on each side; hence called the Five-spotted Sphinx, or sphinx quinque-maculata, by entomologists. It comes near to the European privet Hawk-moth, which however has red spots, and the chrysalis has a short, blunt tongue-case as shown at D. We have several other species of this family; and allied genera of like or similar habits.

These hawk-moths, often erroneously called humming birds, because, like them, they are frequently seen to visit tubular flowers, such as the honey suckle and the thorn apple, poised on their wings; these make a humming noise by their rapid motion while their tongue is uncoiled, and seeks the bottom of the purplish-white bells of the *datura stramonium*, as they expand and spread their charms at twilight to invite this rover to sip the honied nectar distilled and lodged at its base. Their days are few and evil only; having discovered the plant adapted as food for their larvæ, they lay their eggs and perish.

The numerous species of Ichneumons are ever on the alert to find a proper nidus for their brood ; their larvæ feed upon the living bodies of other insects, and thereby destroy multitudes of parasites so injurious to vegetation.

These four-winged flies vary in size, some so minute as to be perfected in the egg of a caterpillar no larger than the head of a pin, while others find the carcass of a caterpillar barely sufficient for a single one ; nor will they lay their eggs on one already containing an egg or eggs of the same species.

Caterpillars have various modes of defence against their common enemy ; the green caterpillar with bands of black and yellow spots, common on the fennel and umbelliferous plants, is provided with a pair of orange-colored tentaculæ, called stink horns, which they thrust out, and jerk their heads back when touched with a pin or the ichneumon, giving out a peculiar odor. These are the Larvæ of the *Papilio Asterias*, a common butterfly of a dark, purplish-black color ; the front wings have several series of yellow spots along their margin ; the posterior pair are similar intermediately of a fine blue, with projecting points called swallow tail ; on the inner margin of each there is a yellow, red and orange spot.

The puss-moth larvæ have singular projectile appendages in their rear ; others are provided with acrid juices which they expel. All these means of defence fail to deter the brave ichneumon from accomplishing its object : they rise and alight, and at every thrust lodge an egg into the body of the doomed caterpillar, writhe, jerk, and twist as it may, in its apparently conscious dilemma. The eggs lodged, soon hatch and breed the little maggots which revel and banquet on the fat juices of their victim, without attacking the more vital parts, so that the caterpillar still feeds languidly and lingers out its existence until the larvæ within them are matured and ready to undergo their change, when they come forth, spin their cocoons, and in a few days become pupæ ; the perfect insects escape in a few days more to renew the same annoyance to other hapless creatures like the one they have just left, a dying exhausted carcass. Thus we find an endless variety, each peculiar in its choice of a nidus in the one case, as in the choice of plants in the other.

The metamorphosis of the caterpillar, as it buries itself, and like an Egyptian mummy, is confined in its chrysalis during winter, comes to a resurrection in a form so different, that the ordinary observer may scarcely believe the fact.

" Shall the poor worm that shocks thy sight,
The humblest form in nature's train,
Thus rise in new-born lustre bright,
And yet the emblem teach in vain ?"

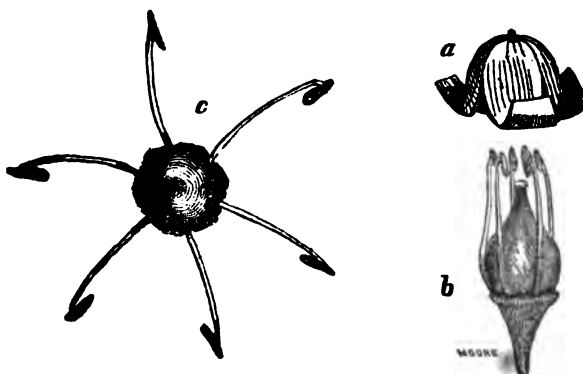
" Go, mortal ! in thy reptile state,
Enough to know to thee is given ;
Go, and the joyful truth relate ;
Frail child of earth ! high heir of heaven !"

The " neglected American poet," Samuel J. Smith, of New Jersey, whom you, Mr. Editor, commemorate in your January number, has the following most beautiful and poetical allusion to the resurrection of the chrysalis :

" But lo ! what magic bursts the living tomb !
What voice angelic bids the sleeper rise !
He wakes, arrayed in beauty's living bloom,
His new-born plumage tinged with rainbow dyes ;
In air gay floating, while the sunbeam flings
A blaze of splendor o'er his glossy wings."

HYBRIDIZING THE GRAPE.

MR. J. FISKE ALLEN's description of the mode of hybridizing the grape is the most lucid and practical, and as the subject is attracting attention anew we present, by the kindness of Mr. A. O. Moore, the accompanying cuts, which will make the subject easily understood.



FLOWER OF THE GRAPE.

a is a magnified representation of the bud of the grape, *c* is the blossom. The change from the bud to the blossom is usually rapid, and takes place about thirty or forty days after the shoot appears in the spring, which bears the fruit. This bud which forms the blossom consists of a covering or cap, and the embryo berry, with fine anthers, which, when the time for inflorescence has come, is raised or lifted by the anthers, and the wind blows this cap free; *b* is the blossom, the anthers of which are to be clipped and deprived of their farina; on the top of the embryo is the pistil; upon this is to be placed the farina or pollen of the male plant. When this is done, impregnation takes place, and the embryo rapidly swells off. If the operation has not been effectual, the berry will remain as it is. When the grape has attained one-third of its size, it remains stationary two or three weeks, and at this time it is perfecting the seed. When this is done, the fruit begins growing again; thus it appears that the seed will vegetate, even if the fruit does not ripen sufficiently to be eatable.

This applying of the pollen or farina of one variety to the pistil or stigma of another, is the method of proceeding to obtain new sorts in the shortest time, and is called hybridizing. That our native grapes have been hybridized with the foreign, we have no doubt.

The bunch to be acted on should be thinned of three-quarters of the buds; the lower part should be cut away entirely, immediately before inflorescence, the strongest buds always to be left. Observe them closely, and, as soon as the flowers open, with sharp scissors clip the anthers, being careful not to injure the pistil. With a soft brush apply the pollen from the kind to be used for impregnation; or the whole bunch which is to furnish the pollen may be cut from the vine, and gently rubbed or applied to the bunch, by frequently striking them together on every side. Repeat this for several days, until it is evident the fruit is all impregnated; a fresh bunch, with the pollen in a suitable condition, must be had at each operation. The pollen must be dry and in a falling condition, to be fit for the purpose. The reader is referred to Mr. Allen's work on the grape, issued in New York.

EDITORS TABLE

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the *HORTICULTURIST*, Germantown, (Philadelphia,) Pa. Packages by Express, &c, should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

THE PARK.—There is scarcely a subject connected with the topics appropriate to this Journal that interests the lover of trees, scenery, and humanity more intensely than that of Parks for the people. It has been long a topic of the *Horticulturist*, which indeed has the credit with many of having originated and encouraged the idea for New York and other places. When once a good specimen is seen, our people will excel in the formation of pleasure grounds, and we shall have them attached to every city and town where there is a particle of taste or public spirit. One good example will prove sufficient to stimulate our population everywhere. It is consequently of the greatest interest that the park, commenced with so liberal a capital, should be correctly and artistically planned and finished. Various correspondents have sent us their ideas, and others have overwhelmed our tables with newspapers and so forth, as if expecting the *Horticulturist* would take sides with this or that party struggling for power. This we cannot do, nor can we ever be content to give a partisan coloring to these pages. But there is a right and a wrong way of making parks, and we look on for the present with intense interest on what is going forward, quite incompetent to contend with the politics and the politicians, who have torn the whole subject into shreds, and shall we say "patches." When the fog has cleared up, we mean to look after the Park, and meantime select the following communication from the many appeals before us, as the most suitable one we have received to place before our readers. Mr. Chorlton when he takes his pen is very apt to know what he is about. Some of the best qualified to advise respecting the Park have stood in the back ground, because park-making is like painting a fine picture, and they ask if Wouvermans or Claude Lorraine would consent to produce a master-piece under orders of a political mayor, or have their little bill of road-making disputed by the common council, who would call a willow an oak, and wonder what people wanted better than any shade tree that would cost the least money. But *after all*, we are to have a Park.

Some fear is expressed as to the safety of entering or crossing it at night, when there will be so many places of concealment for rogues and murderers.

THE NEW YORK PARK.—MR. EDITOR—You are aware that the Commissioners chosen for carrying out the Central Park of New York, some time ago, offered four prizes for designs, the value of which respectively were \$2000, \$1000, \$750, and \$500. This inducement, combined with the ambitious feelings of our best Rural Architects and Landscape Gardeners, has developed such an amount of talent as is rarely to be seen. The final time fixed for the presentation of these plans, with estimates of expenses, and detailed explanations, was the first of

April last past, and the result was thirty-five in number, two of which, however, were not for competition. After the decision of the judges it was agreed that the whole should be exposed to public view at twenty-five cents entrance, for the benefit of the unsuccessful competitors. Taking advantage of this, I went the other day to see them, and was much pleased with the artistic skill, and noble ideas, that were collected into one view. As might be expected in such a case, there is every grade displayed, from the highest appreciation and conception of the grandest landscape, down to geometrical "moonshine;" but enough of the former quality is exhibited to convince the whole country, that we have more talent existing than we have been in the habit of believing. After reducing the collective number to some twelve or thirteen, this is clearly verified, and leaves not a little study for the most qualified critic to decide upon the comparative merits of each; and, were it not for a distinctive difference in the bold and elevated ideality, contrasted with the approach to tameness which exists in some three or four of the best, it would have been a most difficult matter for the Commissioners to have chosen the *really best*.

The one to which the first premium is awarded, well deserves its position. The admirable way in which the undulations of the drives and footpaths are in harmony with the different elevations of the ground level, and their easy, graceful, yet bold curves; the appropriate grouping of trees and shrubs, the arrangement of each part of the general whole with an eye to convenience, without interfering with the main design, all contribute to entitle it to become the approximate portraiture for which it is intended. It will be well if the Commissioners complete the work as the design dictates. There are one or two trifling improvements that might be made, but these ought to be done by the authors, for any foreign interference would only break up the originality, and, most likely, produce an abortive effort. Considering the peculiar form of the site of operations, an extended parallelogram, with nothing as outside surroundings but straight-lined avenues and right-angled streets, and also that three of these streets lead to, and must cross the intended park, and further, that a large portion, in the centre, is to be devoted to two reservoirs for the supply of water to the city, the designers have had more than ordinary difficulties to contend against. The first of these has been overcome by arranging for the general traffic to pass under the elevated park drives, and the latter by winding around the exterior boundary of the embankments, and judicious planting, so as to hide what would be, otherwise, a nuisance; while the water level itself will be seen as a small lake from a walk arranged for the purpose.

The second prize plan provides for these difficulties, but not so effectually. It has, also, the merit of being an improvement of the present site without breaking up the naturally rolling and picturesque surface, the which would save much expense in the execution. Herein consists its greatest excellence, but with these exceptions there are others that are discarded, which, to say the least, are quite equal, more particularly in the grouping of the trees and filling up of detail. The third prize is an attempt to produce an unbragous effect with straight line and circular curve. In continental Europe, on a level plain, this would look well enough, but it is not at all adapted to the intended locality, nor yet the more majestic and boldly extended character of American scenery generally. The fourth prize is quite equalled by several others; notwithstanding it displays very fine ideas.

All the best designs, and, in fact, those only that are worthy of commendation, embody the principles which have been so strenuously laid down by the master minds of such men as Downing, Repton, and Loudon, and it would seem that all attempts to the contrary cannot begin to compare with this softening down of Nature, and the moulding our improvements to harmonize with the scenery of the country, or character of neighborhood in which they exist. There, perhaps, never was a better example, than is shown in this exhibition, of the truth of this fact, and it is very gratifying to know that we have so many practitioners who are capable of giving satisfaction to all who may require their services and can appreciate the beautiful.

Respectfully yours,

WM. CHORLTON.

REBECCA AND DELAWARE GRAPES.—So anxious have grape lovers been to obtain the new grapes, that growers have been obliged to sell small plants forced in hot beds, to supply the demand. It would be no wonder if the poor starvings had not proved hardy; outcry has been made against them, but notwithstanding this they are hardy grapes.

LAWNS.—Nothing but cutting frequently will make the lawn, which is the most important feature of your grounds, what it ought to be. You may shirk the mowing, plant expensively, trim industriously, make flower beds, and bed them out at great expense, but if you neglect your grass, the place will always have as ill an appearance as a looking glass without a frame. Frequent mowing induces root growth, and the grass is less likely to burn in hot, dry weather, than when left to itself.

MANURING FOREST TREES.—A correspondent of the *Gardener's Chronicle* says on this important subject:—

"I have made a few experiments and observations how trees might recover their health and become useful and ornamental to those who possess them. The want of proper nutriment either to vegetables or animals soon shows itself in one way or another, and food applied even in a rough state is to all appearance greedily received when animated beings are in want of it. The trees I intend to make a few remarks upon had fallen into a languid state through want of food, or in other words the soil appears to have been worn out by means of the crop that grew upon it. In a hollow part of a wood where some Elms and other trees were planted some years ago symptoms of decay manifested themselves in a very prominent form, such as the leaves turning yellow early in the season and falling off, when others in a more healthy state remained longer to perform the office assigned them. Leaves in such a state make little wood for the tree that bears them; the young shoots apparently never ripened their wood, for many of them died, and the trees altogether had a decaying appearance. The hollow ground was used to put rubbish in that came from the garden and other places. It was thought at first that the rubbish would kill the trees by burying the roots too deep, but much that was put there was of vegetable origin, which soon decomposed, and being of a porous nature did not prevent the air from reaching the roots, and instead of injuring the trees they soon began to show signs of improvement. Their health recovered rapidly, their leaves expanded in length and breadth, their shoots did the same, and their leaves instead of being the first to droop in the autumn, continued to hold on as long as most deciduous plants do. From these observations we may learn that even old trees may be made to have a healthy old age, and young ones that have set prematurely in their growth, from want of proper soil to grow in, or some deficiency in the constituent parts of the soil, may be made either by liquid or solid food to resume a healthy state, and may live from generation to generation a shelter and an ornament in the place which they occupy. Liquid manure may also be applied with advantage to forest trees. In a plantation where the trees were chiefly Oak, Elm, Maple, Spanish Chestnut, and Birch, and the soil light, the subsoil being of a clayey nature, where liquid manure was applied to some of the trees, they profited greatly by it. The few Elms that remain in the plantation in the natural soil measure on an average about 1 foot 7 inches in circumference at 3 feet from the ground; the Maples or Sycamores in the same soil measure about 1 foot 9 inches in circumference at 3 feet from the ground. In the same plantation and same soil there are two places where the Maple and Elm have grown much better than the rest. These have had their roots occasionally watered with liquid manure, and the difference in the measurement of the stems shows that they agree well with such treatment. In one of the places the circumference of the Maple 3 feet from the ground is 3 feet 5 inches, and contains about 12 cubic feet of timber, and the Elm measures 4 feet in circumference, and contains about 20 cubic feet of timber; in the other place the Maple measures 3 feet 6 inches in circumference, and contains about 14 cubic feet of timber, and in both places the trees are remarkably healthy, and stand about 18 feet apart. It may be a long time before such manure can be spared for growing forest trees, and there are

some kinds to which it would do more harm than good if it were applied, such as Pine and Fir trees; but if even the slope thrown away as waste water from gentlemen's and farmers' kitchens and dairies were applied to the purposes of arboriculture, there would be both pleasure and profit derived from the application. Many trees may be seen growing in soils naturally poor and unfitted to carry heavy timber without assistance, and trees considered by many to be in the last stage of existence may be made to renew their growth; for, give a tree room to grow and food to live upon, and vegetable physiologists will not be able to tell how long it should live and how large it should grow."—*P. Mackenzie*.

The reader of the *Horticulturist* has frequently seen paragraphs on the feeding of trees. In a late number, a valued contributor replying to a former article, says, "Do not feed your plants (Evergreen Plants) well; on the contrary, if you have any doubt of the *hardihood* of a plant, *starve* it; let it make little growth, but well ripened wood." This is good advice, but we are reminded by "A Hasty Reader" that this upsets the received theory. Pray remark that the writer says, "If you have any doubt of the *hardihood*," &c. The advice given on both sides is correct; thousands, nay millions of all descriptions of hardy trees are planted in bad soil, in a hole filled with earth more or less adapted to their wants; they soon exhaust their first meal, and send rootlets to the bad surroundings where they meet with nothing to nourish them; they cease to grow with their *natural* rapidity and vigor. Dig round the roots, insert their natural food, and they recover and progress. No man that has the slightest practical knowledge will attempt to *over-force* his plantation; at the same time it remains true, as we stated in the *Horticulturist* ten years ago, that "trees may be fed with as much propriety as chickens." In the operations of nature we see the leaves annually decay and nourish the root; there is no objection to bringing leaf mould and applying it with a shovel as a top dressing; the nourishment designed by nature is carried down by the rain to the roots; there is no reason why we may not assist the process still further and bring the natural food of our plants to the roots where the nourishment will be sooner imbibed. The danger consists in over-forcing and especially in over-forcing so much that the new growth will not bear the coming winter's cold. This takes place in some of the States of the Union where they have an almost tropical summer and an arctic winter, and we see the growth bears evidence of the injury; the trees present dead limbs, especially on the north side and where no shelter occurs. Sometimes the whole outside of an "opening" will present a phalanx of dead wood.

In our last number, guano is recommended under certain circumstances, and in moderate dilution, to promote the growth of conifers (hardy); it is simply supplying what nature demands when it is otherwise deficient in the soil. The opinions of our two correspondents, H. W. Sargent, Esq., and the Rev. A. D. Gridley, do not differ so much as "A Hasty Reader," supposes; the one would very properly rather *starve* a tender conifer than over-force it by food; while the other would feed his hardy trees "with generous food, that they may make a vigorous growth, and always wear the bright hues of health." He would not of course convey the idea that they should be fed so much as always to have the sickly hue of disease, or be subject annually to the destruction of their unripened wood.

SUBSTITUTE FOR BOX-EDGING.—The following from the *Gardener's Chronicle* will interest some of our readers: The grass selected for trial was the common Sheep's Fescue Grass (*Festuca ovina*). A patch of this was sown, and the young plants—easily separable from other kinds of grass by their appearance—were planted with the dibble at two or three inches apart. They soon formed very elegant lines of slender green blades, more graceful in appearance than lines of box, and equally effective. The only objection that we have discovered is, that the green color of this kind of grass is rather dark and heavy; but nevertheless it is the best kind of live edging next to box which we have seen, and is far cheaper than that, and from this cause alone is to be preferred for many purposes.

The Sheep's Fescue Grass forms a continuous or linear mass of bristle-like leaves, the central ones standing erect, about three inches high, the side ones falling over gracefully, so that the

edging is from four to six inches through. In early summer the plants throw up their culms or flower-stems, which average a foot high, and are quite erect; these may be removed by clipping at any period after they are formed, and this is probably all the attention that would be required in ordinary cases. The plants afterwards go on filling out with leaves, but without increasing much in bulk, and may either so remain or be cut close in autumn to remove the dead blades and secure fresh green leaves.

This grass being strictly tufted in its mode of growth, the distance between the plants should not exceed three inches, in order that there may be no gaps between the little tufts, but that the plants may fill out the edging lines evenly and compactly. It is, moreover, important that of the many varieties of Fescue Grass, *one* only should be planted, otherwise the growth will not be even. The common sort, being the dwarfest and shortest in the blade, is the best for the purpose. A very small quantity of seed will furnish plants for a considerable length of edging, so that a few experimental plants would furnish an ample supply in most cases.

STANDARD ROSES.—Standard Roses, now so much in vogue, require a good stake to preserve them from toppling over, the heads being often too heavy for the root. A plan of fastening standards to supports has been introduced, which is found to be perfectly satisfactory. It makes a capital strong neat tie, without the chance of injury to the plants or their getting loose: it is merely a band of soaked straw, tied with strong string between the plant and support, and at the back of the stakes. It is well adapted to other plants requiring like support.

While on the subject of Roses, we may here repeat the following on propagating this flower by layers, from the "Country Gentleman":

PROPAGATION OF ROSES BY LAYERS.—June, or one-seasoned roses, are to be met with in almost every garden. It will take a long time to drive them out of the fields, with perpetuals and other roses, nor is it desirable. A rose is a rose, and many of the June roses are exceedingly beautiful and fragrant. These and Perpetuals are mostly (or readily) propagated by layers. The middle of July is considered about the best time—method of procedure similar to any other kind of layers, as follows: Select shoots eighteen inches or two feet long; cut off the leaves close to the shoot about two-thirds of their length, leaving them on at the top of the layer. Bring the shoot to the ground to ascertain the place to make the hole to receive it. If the soil is not good, take out a hole sufficient to hold a peck of made soil, which should contain plenty of sand. Then tongue the shoot, i. e., introduce the knife just below a bud, and bring upwards, making about a one inch length cut; place a small piece of stick to keep the tongue open; then use a crotched peg to keep the layer in its place in the soil. By October or November the layers will be rooted, and may be transferred to the nursery row, or any other position desired. The stoutest rooted ones may even be potted to force early into flower.

E. S.

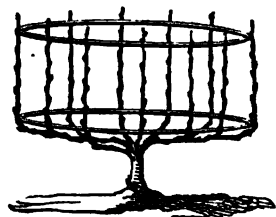


"HOW PLANTS GROW," is the title of a new book by Professor Gray, intended as a popular introduction to the study of Botany. It has also "A Popular Flora" attached. We know no writer who is so lucid as Dr. Gray, and we trust that his new publishers now placing his works before the world in a popular form will be rewarded. Ivison & Phinney, New York.

BULBS PRODUCED BY OLD BULB-SCALES.—Two ladies on a return from the south of Europe in 1856, placed specimens of dried leaves, seeds, mosses, &c., in a book with black sheets of paper. A bulb found on the rock of Gibraltar being too large, the lady took off three

pieces of the outer skin or scales from the outside of the bulb, and sewed them with thread to one of the paper leaves of the book. After their return, the book was placed in her dressing room, and in 1857, having gone on another tour, on their return, one of them took the book from the press and was surprised to observe that its cover was not lying flat but bulged up; she opened it, and to her astonishment found that from the bottom of each of the three scales, small bulbs had commenced to grow. This book had been in a perfectly dry state in a dry room for more than a year, and fourteen months had elapsed since the scales were sewed in. This curious case is analogous to one recorded in last year's *Horticulturist*, page 169, with an illustration.

TRAINING GOOSEBERRIES.—To prevent the shoots of Gooseberries growing downwards, by which the fruit gets soiled, and is rendered unfit for use, I have adopted the following plan: I make hoops of hazel boughs, and place them over the gooseberry plant. Two or three stakes are required to fix the hoop to, that it may be at a proper height from the ground, to hold the bunches sufficiently high. If one hoop is not enough to hold all the bunches properly up, two hoops may be used. The stakes will require to be left high enough to admit of the second hoop being placed, should it be requisite. Should any of the shoots be ill-placed, they may be adjusted, by being tied to the hoops."—J. READ.



[Your mode of training the gooseberry tree is good, not only for the purpose of keeping the fruit from being soiled, but to admit light and warmth to the centre, for the better ripening of the fruit. The annexed is a woodcut representing this mode of training. Many other plants are beautiful, trained in this way. For instance, the head of a Standard rose with an open centre and a rim of roses looks like a wreath, and is highly ornamental. A box tree thus spread out may represent a vase, and the open head tends to its successful growth.]

LAYING OUT A GARDEN.—If the lines of walks in a garden are ungraceful and inartistic, it is not likely in other respects it will be an example of good design. But even supposing it were so, the circumstances of the walks being entirely opposed to this would sadly mar the general effect. There certainly is something anomalous in the fact that the eye which can appreciate, and would not for a moment tolerate other than the beautiful, in a building, in furniture, in ornament, in dress, should yet day after day endure forms in flower-beds, and lines of walks in gardens of the most tasteless and common-place character. A fundamental rule in determining the direction of a walk is that some apparent cause must always exist for every deviation from a right line. Mere curves in walks for which no reason is assigned, are unmeaning and absurd, and exemplify the worst possible taste.

The practice of placing a resting place, or covered seats at any given points in a walk commanding a pleasing or particular view, is a common one, and may with propriety be *occasionally* followed, for as the practice is a species of trick, it will, like all other tricks, if frequently played off, disgust rather than please. It implies a degree of compulsion, and we never truly enjoy anything which we are compelled to do. Where pleasing objects or distant scenes can be commanded, they should if possible be brought into view as a matter of course; the pedestrian ought not to feel that he is brought to any particular spot for the mere purpose of being shown something, but that the several beauties which delight him are the natural concomitants of the locality.

Even width of walks is a matter of importance in the general appearance of a garden. If too wide they reduce its apparent size, and give a bare appearance; and on the other hand, if too narrow, they are mean looking and inconvenient. In gardens of tolerable extent, the walks should not be much less than six feet wide; but there must ever appear a degree of relationship between the size of the garden, the extent of lawn and shrubberies, and the breadth of the

walks. And there will always be found to exist a certain relative proportion between them, which should be adhered to if an harmonious effect is to be produced. The degree of convexity of a walk adds much to or detracts from its good effect. They are too often rendered both unsightly and inconvenient by the excess of this. To such an extent is it sometimes carried that the only part where one can walk with any degree of comfort is on the extreme edge. And then the sides are usually of a corresponding depth, presenting for several months after every periodical "edging" a harsh line of bare earth. The walk which has the best appearance, other circumstances being equal, is one that is not higher in the middle than the grass margin at its sides, and where those margins are not more than half an inch deep and bare earth not perceptible.

It is important to bear in mind that the repose of a garden will be in a great measure destroyed, and its apparent extent much lessened if the walks are allowed to be conspicuous in the general scenery. Though a bold curve of walk with its appropriate appendages forms a pleasing and effective interlude, the walks, as a whole, must be kept subordinate.

DIELYTRA.—A correspondent in Hartford, Ct., informs us that he has seen a border some thirty feet long filled up with large *Dielytras*, all in perfection of growth and bloom, edged on one side with moss pinks, and on the other with *Deutzia gracilis*! It was exquisitely beautiful.

PLANTING.—A valued and enthusiastic planter thus writes us of his pleasant spring operations: "Haven't I tramped miles in search of good specimens of hemlock! My man, Patrick, and I start off every day after breakfast in a lumber wagon for the hill-sides, taking along a watering pot, shovels, and spades for digging, old sacking to cover up the roots, and ropes to tie the tops so that they shall not get bruised. A basket of creature comforts goes along with us, and the last received *Horticulturist* and a daily paper for my reading while waiting. Arrived at the hills, I go about seeking beauties, mark them, and Patrick follows on and digs them up with wonderful care. Of course, we don't cut off the roots close to the tree, or shake off the dirt. A wagon full obtained, we go singing home, and when the trees are planted, I feel very rich. The watering pot on the road is kept in use to prevent dryness in the roots, which I find important."

FISH AND DORMICE.—The movement by the New York Agricultural Society, in offering a premium for essays on the cultivation and domestication of fish, we have already designated as it deserves. The subject is not only discussed in intelligent circles, but *practice* has already demonstrated its importance. It is a matter of surprise that any people should starve in immediate proximity to a sea swarming with food. It will soon be equally wonderful that any farmer having a stream capable of rearing fish should allow such a source of wealth to run to waste. Things go round in cycles; in ancient times the Romans cultivated fish at great cost, if only as a delicacy. Lucullus had a mountain pierced near Naples, to admit the sea into his preserves, and expended more money upon it than upon his whole villa. Another who possessed a villa, otherwise of very humble pretensions, had preserves for fish of such a size, that he sent six thousand to Julius Cæsar on the occasion of his triumphal banquets. These *refined* ancients also cultivated dormice for the table. Varro gives an account of a preserve for dormice which was to be paved, to prevent the animals from escaping, and to have within the inclosure oaks to supply them with acorns. But when the mice were to be fattened for the table, they were kept in the dark in stone jars, and fed on acorns, walnuts, and chestnuts. Who speaks first to resuscitate a *dormicery*? which, after all, may be about as reasonable as a dark hutch for rabbits. Preserves for sea-snails or periwinkles were popular before the civil war between Cæsar and Pompey. Shell fish were fattened with a mixture of boiled wine, meal, and other substances, so that they became quite an article of luxury; they increased the size by breeding, so that the shell of a single animal could contain as much as fifteen quarts. One of the large pinnsæ are doubtless here indicated.

THE VINE MILDEW having made its appearance in one of my houses, I tried the following plan of curing it: Having shut the house quite close, I got four large flower pots, and half filled them with lumps of quick lime; having sprinkled it with water, I strewed a handful of sulphur on each pot, and let it steam up through the vines till it quite filled the house with steam. On the following morning I opened all the ventilators, and gave the house a good syringing till I quite saturated it. I repeated the same the following day, when I found that the mildew had wholly disappeared. I have also tried the same remedy for red spider in a peach-house, and I soon found it to vanish. If gardeners will use sulphur in this way, they will find no ill effects from it; as soon as they have strewed it on the lime they can leave it till the following morning.—*J. James.* [An excellent device.]

STATE FAIRS.—IOWA, at Oskaloosa, Sept. 28-Oct. 1. KENTUCKY, at Louisville, Sept. 7-11. Competition, except for farm and garden products, open to the world. ILLINOIS, at Centralia, Sept. 14-17.

CATALOGUES, &c., RECEIVED.—Catalogue of 1857 and 1858 of Fruit and Ornamental Trees Vines, &c., for sale by Isaac Pullen, near Hightstown, N. J. Full and correct.

Premiums and Regulations for the Ninth Annual Fair of the Ohio State Board of Agriculture, to be held at Sandusky the 15th, 16th and 17th of September, 1858. Characterized by the good sense and practical knowledge of our Ohio friends.

Annual Report of the Agricultural Society of the State of New Jersey. The Jersey men are determined not to be left behind in the race, and if any State was ever well situated as regards two markets, New Jersey is the one. She has an important mission to fulfil and is actively engaged in doing it.

FOR MARKET PURPOSES.—Even a Boston monthly says, of the Summer St. Germain Pear, in his June number, "compared with the Boston, Tyson, and Rostiezer, it falls short of the requirements of a superior pear; but judged by the popular standard of a market pear, as we judge the Bartlett and some others, it is a valuable variety." Is it possible? In his own language, "the public may truly say, the smallest favors gratefully received," and we add for him, inferior in proportion.

GREEK IDEALS OF GARDENING.—We ask the attention of readers to the article of Professor Edward North, on page 299. The writer is a master indeed of English style.

WISTARIA, WISTERIA.—The engraver, in the frontispiece to the last number, printed Wisteria on the plate instead of Wistaria. The plant was named after Dr. Caspar Wistar, and it should always be spelled with an *a* instead of an *e*.

CONQUERING THE CURCULIO.—Mr. W. N. White writes from Augusta, Georgia, that he has succeeded this season in conquering the great enemy of the plum. He says: "Forces employed against him—one man, one little girl, three two months' pigs, sixteen Brahma fowls, and two Muscovy ducks. Implements, a mallet and tin bucket. Modus operandi: the nectarine trees being the most dangerous point, were fortified by keeping the troughs for watering the fowls, &c., underneath them. The trees were briskly shaken every morning—jarring the large ones with a mallet. Under the bearing trees, the corn for the fowls, &c., was scattered directly after they were shaken. At night, all the fruit not consumed was picked up carefully by the little girl and boiled and fed to the cow. Result: though plenty of fruit was visible the first few days, the enemy seems to have retreated. Plums are beginning to ripen, so the crop may be regarded as secure. Some twenty-eight sorts of plums, and two nectarines are full of fruit, which will yield probably ten bushels at least; had the trees been large enough, they would have yielded three times as much with no more trouble; half an hour a day will more than do the work in an orchard that would yield fifty bushels of fruit; except the packing up, which is a trifle."

FRUIT.—He continues: "An unequalled fruit crop is rejoicing our section of Georgia, and in all the lower part of the State. Above us, in the mountain section, where our great apple crop is made, nearly everything was cut off by frost the last of April. There is a fine crop at Fruitland, near Augusta. Here in early June, we have already three varieties of ripe apples, viz., May, June, and Harvest; and of Pears, Amire Joannet and Madelaine; Plums, the Chickorow and the Gentleman, the latter a new variety from Germany, which seems quite as early as Primordian and of fair quality for the season. We have also the Apricot and the Cherry in great perfection."

In a Southern paper we find it stated that the *Shockley Apple* was kept over till the "May" came to perfection this season.

MERITED REBUKE.—MR. EDITOR.—A certain youth who signally failed in establishing the "Florist" in Philadelphia, has taken upon himself to give an opinion upon what a periodical should be, thus trying to shame *his own*, while he gives vent to his spleen. No doubt he considers himself qualified to give an opinion on the bench of the Supreme Court, or on any subject; but I suspect his place will always be where he began, at the lower end of the potting-bench. "Scott's Seedling Strawberry," noticed in the "Country Gentleman," was no doubt named after him, as both he and it are "wholly without flavor." I find the following merited rebuke to this upstart in the "Country Gentleman." Mr. S. had essayed a reply to your correspondent, Mr. Allen, who says:

"Another word: a writer, R. R. S., immediately following your editorial, under the head of 'Pear fungus' says, 'a prominent critic has lately asserted that of the *causes* of the *crack* and *blight* which attacks the *Virgalieu* and other pears, "*nothing* is known but that it exists;"' and goes on to quote what 'one of the ablest *Cryptogamic* botanists of the day' says about it. This new and wonderful authority talks of '*Cladosporium*,' and '*Helminthosporium*!' Shades of Lindley, Michaux, Nuttall, and company, deliver us from such a commentator as R. R. S., and let him tell us in understandable English language what the cause of the 'crack and blight,' is if he knows it, and then how to avoid and cure them, without smothering us in nonsense."

THE PATENT OFFICE.—A Committee on the Patent Office has reported favorably on the qualifications of Mr. D. J. Browne, and forwarded their conclusions extensively.

GOOD RULES TO OBSERVE.—1. Never to water but when the plants are actually in want of it; that is easily known by feeling the soil with the finger. While it is moist no water is needed. When it feels dry, then water, which will not be found to be necessary oftener than three times a week in autumn and winter, and once a day in spring and summer, giving it copiously every time, and allowing it to run away entirely from the plant, so that the pots may never stand in it. The water used should be either rain or river water. If necessarily from the pump or spring, it should be allowed to stand in the air a day or two before using.

2. To give plenty of air at every possible opportunity, *when the weather is mild*, either by having the window up, or by removing the plants outside. If, in warm weather, this is done under a burning sun, the pots will have to be shaded, as the sun upon the sides of the pots would greatly injure the plants; if in bloom and exposed to the sun, the flowers would soon fade and drop.

3. To keep the rooms where plants are at as uniform a temperature as possible, and the plants themselves as near the window as convenient, except in severe weather, when they are better near the middle of the room during the night.

4. To examine them occasionally, to see if the pots are full of roots. When this is the case, if the plants are thought worth it, shift them into pots of a larger size, potting in good soil, or if not shifted, more care must be used in supplying water, as they require a larger quantity when in this state. In summer, water frequently over the foliage, but not unless they also need it at the root as well.

These may be adopted as very general rules, though more absolutely necessary to some plants than others, but will be found beneficial to all.

There is a good deal to be considered in buying plants, in making the proper choice; for, however gratifying it may be to have those which look the best in full bloom, it is most satisfactory to have those which last the longest in perfection, especially those which have a succession of bloom, and *whose foliage is interesting when the bloom is gone*. This rule may be deviated from in behalf of Tulips, Hyacinths, Crocuses, and other bulbs, which are valuable when little else is in flower; they will also bloom in the darkest streets of cities. These should be purchased either in the beginning of November, when the roots are dry for planting, or in pots, when they are beginning to grow; for if delayed till they are in bloom, nine-tenths of their value is lost, because they are interesting in every stage of their growth, from the first formation of the leaves to the perfection of the flowers. Every day of development has its charm, and therefore they ought to be possessed from the first. All these require a plentiful supply of water when in a growing state; and if kept cool after showing flower their season of blooming is prolonged.

CRYSTAL PALACE DOINGS.—It will interest our readers to peruse the following items from the Crystal Palace, London, where things are done on a magnificent scale:

"The forcing house for supplying the Crystal Palace is of the very best, and of the very simplest kind. It is one hundred feet long; ranges nearly south and north; is twelve feet wide, outside measure, and eight feet high in the centre over the path, which runs along the middle of the house. The path is three feet wide, and there is a flat shelf of open woodwork on each side of the path. The shelves being as high as a man's hip bone. So that neither male nor female can sweep off any of the pots, on either side, when walking up the centre. 'A monstrous comfort, is it not?'

The outside walls are a little higher than the shelves, and a span-roof completes the house. There is a four-inch flow and return pipe under each shelf, and high enough from the ground, to allow the bottom ventilation to enter below them. 'Cold currents' are thus avoided, as the cold air must come in contact with the warm pipes, before getting to the plants. The house is in two divisions; the one next the boiler being the hottest, and the contrivance to confine the circulation to one end, when that is desirable, is most simple. A stop-cock is in the top pipe, and a pipe communicating between the top and bottom pipes, just behind the stop-cock, and between that cock and the boiler.

"In the end, which is the forcing division at present, the night heat is just 50° to 55°, but they allow a play of 40° degrees between the night and day temperatures; not with fire-heat, however, but by not giving air till the sun heats up to 90°, or, with a little top air, to 100°. This is coming close to Mr. Cidd, and Mr. Latter's way of airing cucumbers in winter.

"The old rule of 'one to six' recurs to one on hearing the niceties of ventilation; that is, for one inch of top air, give six inches at the bottom ventilators, and never depart from that rule, in winter and spring forcing, until you are forced yourself out of it, by sun heat rising beyond the heat which the plant, or plants, you are forcing can endure.

"Hyacinths, Tulips, Narcissuses, Crocuses, Azaleas, Hydrangeas, Pinks, Cloves, *Cytisus racemosus*, *Acacia armata*, seedling Cinerarias, and China Primroses, *Deutzia gracilis*, *Dryetra spectabilis*, and all such established favorites, force from February without any bottom heat, or plunging, and will not suffer in sun moist heat up to 90° for two or three hours daily, provided the night air, or heat, is as low as 50° in mild weather, and 55° when the frost is sharp. No plants were ever forced better.

"The Hyacinths are the best of the old cheap kinds, they are potted in large 48-pots, or small 32's, in good holding yellow loam; and the bulbs are entirely on the surface of the soil, the leaves of all the offsets they make are pinched off, as soon and as often as they can be laid hold on; but the bottom, or bulb part of the offset, is never touched; the wound which the separation from the old bulb would cause, might kill, or very much injure, the old bulb in the dead of winter. The old *Waterloo* Hyacinth throws up four flower stems from one good bulb, by this treatment; sometimes three, and very seldom less than two, as may be seen, round the basin of

the crystal fountain all the spring. The *Waterloo* is the highest colored one there—a crimson in fact—far better in color than we generally see it; but the immense body of fresh mild air, inclosed by the Crystal Palace, brings out colors, and the tint of leaves, far beyond any method within our knowledge. Most of those very old Camellias, and Rhododendrons, were half dead, or three parts burnt up at the roots, three years ago, when they were planted here; and many of them would have died outright, in small houses, in a few years; but what splendid specimens they are making already.

“One large oval Majolica vase, fit for the Queen's room, is managed, as most drawing-room pot flowers should be, and a hint from this Court may be useful, just now. All the most costly drawing-room vases have no hole, or holes, in the bottom, to let off the drainage from the flower-pots, for fear of soiling carpets. To get over this, the bottom half of this Majolica vase is stuffed with green moss, the pots are plunged in the moss, and the top is then mossed with the finest and *shortest* moss, which looks as smooth as green velvet. In warm rooms the pots must have water, but the quantity of bottom moss ‘takes it up’ like a sponge, for ten days, or more, or less, according to the time, temperature, and the temptations to water. After that, the vase is taken out, put on the oilcloth, and the moss is squeezed, after the manner of wringing in the laundry; the moss seeds go in the surplus water, and the moss itself is green, damp, and comfortable for the pots and plants a second, and a third, and many times, for nobody knows for how long a time; doing away with the expense of purchasing moss, so difficult in towns, and with the uncomfortable apprehension, in the country, of getting in horrid creatures and crawling things from the woods.”

THE VIOLET OF ROUEN.—We have frequently pointed out the advantages which horticulture might derive from some of our indigenous plants. One of our friends, M. Viginien, a zealous botanist, has drawn our attention to the Violet of Rouen as a plant adapted for edgings. M. Jacques has introduced this edging into the Park of Villiers. This horticultural novelty, so far as we are aware, has not been propagated elsewhere; and we venture to recommend it as a treasure of which many horticulturists do not know the value.

A few words upon the principal characters by which the Violet of Rouen, *Viola rothomagensis*, may be distinguished will, we think, be necessary to enable our friends to identify it. It is perennial, with diffuse tufted angular branches, spreading at the base, and then growing erect to the height of eight or ten inches in a cultivated state; but according to authors the actual height of the plant in a wild state is seldom more than five or six inches. The leaves, which are of a greyish green, are oblong oval, deeply crenated, and, as well as their petioles and stipules, thinly set with hispid hairs. The stipules are large, pinnati-partite lyrate, the terminal lobe usually entire, or nearly so, and larger than the side ones, which are linear. The peduncles are long, furnished with two bracts, and supporting flowers with petals which do not equal twice the length of the calyx. The spur is linear, straight, elongated; the flowers are blueish and violet.

The Violet of Rouen is a species much sought after by the Parisian florists on account of its rarity. In the neighborhood of Paris it is only to be found, it is said, at Mantes, Liancourt, and Meaux; but its true locality is Saint-Adrien, near Rouen, where on the sandy banks of the Seine the plant is said to be very abundant.

This Violet, which some botanists considered to be only a variety of *V. tricolor*, was scarcely cultivated till about 1789. It produces numerous flowers throughout the summer. It is one of the group of *Violaceæ*, which exhibit the property of being perennial, an important point for the horticulturist. Its appearance is graceful, its flowers are richly colored, and its stems have the advantage of covering the surface of the soil. Lastly, it produces from May till October a profusion of flowers, and it is very readily propagated by seed. About the year 1840 the happy idea occurred to M. Jacques of sowing the Rouen Violet in the Park of Villiers, and planting out the seedlings as edgings; and, as we have stated, with very satisfactory results. The late gardener of Neuilly has therefore enriched horticulture with a valuable plant, which

will rank as high as any other, such as *Statice*, *Primulas*, *Larkspurs*, &c., employed for the same purpose. *Léon Gouas*, in the *Revue Horticole*.

"PEAR CULTURE, A Manual, By Thomas W. Field." This new manual, from the press of Mr. A. O. Moore, is seasonable, and from a good source. It is up to the day, full of instruction, and has some views which will require a more lengthened notice hereafter. Price 75 cts.

ANSWERS TO CORRESPONDENTS.

MELINDA.—Notwithstanding the outcry against the "right of search," we adhere to the doctrine in its full sense, in horticulture. All have the right of search, and it is a duty to discover error in whatever disguise it conceals itself. If you are successful, don't hesitate to say so; but if others are not, allow them the same privilege.

TAN.—It is believed the discrepancies in the opinions about the use of tan, may be accounted for by the fact, that so long as it remains on the surface as a mulch, it does no injury; but when dug in it acts as a poison to the ground.

TWO NEW ROSES.—The two new Roses which Mr. Pentland is about to bring out, are Dr. Kane, a lovely yellow and very fragrant; and George Peabody, which treads very hard upon *Geant des Batailles*; it is a free grower, of lively color, and so far, free from mildew. We shall report further.

P. MONTEREY.—Your cone is from *Pinus tuberculata*. It was first discovered by Dr. Coulter in your neighborhood, South of Monterey, in latitude 36°, near the level of the sea, and growing almost close to the beach, intermixed with *Pinus radiata*. It is a tree of slow growth, and seldom attains more than twenty-five or thirty feet in height, with a trunk eight or ten inches in diameter. It is as hardy as *Pinus insignis*; leaves in threes, thickly set on the branches, bright green, rather stiff, with an elevated rib running along the middle on the inner side.

J. JAY SMITH, ESQ.—Will you give by mail, or through the medium of "*Horticulturist*," a select list of plants, shrubs, roses, &c., best suited for stocking a small parlor greenhouse; say twelve by seventeen feet, partially heated by the furnace which warms the dwelling; and say how many of each would give a full show of flowers for winter.

We are not particular in such matters down in this part of the world, and have no one to apply to personally who can enlighten us by practical experience. My object is to save time and money by procuring only such things as are best of their kinds, and each in proper proportion for beautifying the greenhouse in winter. Many of the lists published in the *Horticulturist* are too extensive, and how to select from them is the difficulty with us here.

Fredericksburg, Va.

AN OLD SUBSCRIBER.

We do not think any of the following could be spared in a house twelve by seventeen:

Two *Calla Ethiopica*; 1 *Lantana crucea*; 1 *Lantana delicatissima*; 2 *Poinsettia pulcherrima*; 1 *Euphorbia jacquiniiflora*; 1 *Abutilon striatum*; 1 *Mahonia odorata*; 1 *Laurustinus*; 2 *Stevia serrata*; 2 *Bouvardia leiantha*; 1 *Cestrum aurantiacum*; 2 *Habrothamus elegans*; 1 *Polygala cordifolia*; 1 *Genista racemosus*; 1 *Chorozema varia*; 1 *Pentas carnea*; 1 *Kennedy monophylla*; 1 *Jasminum revolutum*; 1 *Begonia incarnata*; 1 *Bignonia capensis*; 1 *Aphelandra Ghiesbreghtii*; 1 *Olea fragrans*; 1 *Azalea indica alba*; 1 *Azalea indica purpurea*; 1 *Acacia linearis*; 2 Double white camellias; 1 imbricated camellias; 1 *Epiphyllum truncatum*; with a few Scarlet Geraniums, Scarlet Verbenas, Chinese Primroses, Heliotropes, Roseleaf Geraniums, and Neapolitan Violets. *Deutzia gracilis*, *Jasminum nudiflorum*, and *Dielytra spectabilis*, though hardy, will be useful; and a few good Roses will not, of course, be overlooked.

GOSSIP.

ORCHIDS.—The absence of disease in Orchideous plants is to be accounted for by the plants never being exposed to damp and cold *combined*; dampness with suitable warmth, does no harm; moderate cold with sufficient dryness does no harm. Both are indeed indispensable conditions of life. It is only when the leaves become too cold while wet or over damp that the tissues decay, and the formidable "black spot" appears.

CROWNS.—Why for thousands of years have we crowned the Warrior with laurels, the Poet with Ivy, the Citizen with Mural emblems, and the Husbandman with nothing; why are his achievements without record and his name without honor, and his only reward that which is to be found in the words of the then stern Juvenal, "Laudater et alget!" translated by Gifford—"For virtue starves on universal praise."

THE TORPEDO.—The living torpedo was employed by the ancient Greek and Roman physicians as a remedial agent, and a living electric fish was undoubtedly alike the earliest and the most familiar electric instrument employed by mankind. The works of Galen, Dioscorides, Scribonius, and Asclepiades prove that the shock of the torpedo had been used as a remedy in paralytic and neuralgic affections before the Christian era.

CREATION.—"How wonderful," says Hugh Miller, "has the course of creation been! How strange a procession! Never yet an Egyptian obelisk or Assyrian frieze—each charged with symbol and mystery—have our Layards or Rawlinsons seen aught so extraordinary as that long procession of being, which, starting out of the blank depths of the bygone eternity, is still defiling across the stage, and of which we ourselves form some of the passing figures. Who shall declare the profound meanings with which these geologic hieroglyphics are charged, or indicate the ultimate goal at which the long procession is destined to arrive?"

BLODGET says: as we have no answer yet *why* are the extreme variations of heat, moisture, and other sensible conditions, irregular and impossible to foretell as they are, and what are the *causes* of them, it is too early to characterize the opinions which charged these to gods, or causes in the earth &c. as wholly unsound. The wonder age lingers yet, and it may refresh our view of its absurdity to refer to the time when the phenomena were localized, making the solution easier, if it were only correct. Pliny says that, "In many houses there be hollow places devised and made by man's hand, for receipt of wind, which, being enclosed with shade and darkness, gather their blasts." And he gravely asserts that "there be certain caves and holes in the earth which breed wind continually without end, into which if you cast any matter of light weight, there ariseth presently a stormy tempest, whereby we may see how all winds have one cause or another!" At this day generalization alone can seize the true expression of detailed observations, however accurate, and this generalization must be derived from masses and summaries by rigid deduction and comparison.

THOUGH the dog-days are thought peculiarly liable to the introduction of hydrophobia, and people are very solicitous about having dogs muzzled in the hot weather, statistical returns show that madness occurs among dogs nearly as often in the spring, and even winter, as in summer. It is further found that August and January, the hottest and coldest months, are those which furnish the fewest cases.

THE ORANGE CROP OF LOS ANGELES—says a California paper, is coming into market. The crop amounts to about 170,000, and is sold on the ground at \$12 per thousand. The cultivation of the orange is destined to become an important source of wealth to the State, or at least it will occupy many persons, and hold an important place in our trade. The trees commence bearing when eight years old, and will produce a crop worth \$25 per tree, or \$1,000 to an acre containing forty trees. This estimate is a low one, both for the price and the quantity of fruit; for a good tree often yields several thousand oranges in a year. The cultivation

in earnest has just commenced; this year's crop may be said to be the first which has ever come to our market from Los Angeles. The fruit is large and good.

A WATERPROOFING COMPOSITION.—The following may be useful and is, I believe, not generally known. Take three pints of linseed oil well boiled and mix in it one ounce of soft soap. This may be brushed over calico when stretched on a frame. It will resist moisture for a length of time, and is very durable. Pits covered thus admit plenty of light, although I think the tint of it is not good for growing plants, being rather yellow. It is useful in many ways, however, has little smell that is disagreeable, and is besides, cheap.—*D. K.*

THERE is nothing new in striking cuttings in sand and water, as mentioned in the *May "Gossip,"* except adapting it to the purpose in windows and parlors, it is precisely what gardeners do in green houses constantly, even with rose cuttings. After success depends greatly on getting them out of the pure sand as soon as well struck. If struck in a pot, well drained, filled up rather better than one half with sandy soil and covered with a pane of glass, such plants might remain in the pots until planting out time, or be turned out into a simple frame.

EGGS sent to any distance for hatching should be packed thus. Wrap each egg in several folds of newspaper, and then place a thick layer of cotton and straw cut to the length of the box, both under and over the eggs, filling up every interstice with pledgets of cotton. Egg boxes should have their tops screwed down, the jar of the hammer in nailing destroying the vitality of the egg.

MISCELLANEA.

THE TOAD.—Like all the reptiles the toad changes its skin, but the cast envelope is never found, although those of the serpents are common enough. The reason why it is not found is this: the toad is an economical animal, and does not choose that so much substance should be wasted. So after the skin has been entirely thrown off, the toad takes its old coat in its two fore-paws, and dexterously rolls it, and pats it, and twists it, until the coat has been formed into a ball. It is then taken between the paws, pushed into the mouth, and swallowed at a gulp like a big pill.

SPIRÆA GRANDIFLORA.—Among recently introduced and comparatively little known plants is *Spiræa grandiflora*, a hardy deciduous shrub, a native of China, sent to England by Mr. Fortune. In ordinary seasons it flowers early in April; this year, however, the combined cold winds have retarded it, and now, April 23, the buds are but just opening; the flowers are white. I made a drawing from a young vigorous plant, the first which bloomed in this country. One spike of flowers only was produced upon the branch. Older plants threw out very many lateral spikes. The plant grows rapidly in any ordinary garden soil, and flowers profusely. As a spring ornament in our shrubberies it will doubtless soon become conspicuous. *W.*

CYDONIA JAPONICA; VAR. MALLARDII.—The old *Cydonia* (more commonly called *Pyrus*) *Japonica* is well known as a beautiful hardy flowering shrub. We have the gratification to announce a variety raised by M. Mallard, of Mans, of great merit. Its flowers are quite as large as those of the common one, white, most beautifully striated towards the centre with rosy carmine on both surfaces of the petals, so as to leave a wide and distinct white margin all round them. It is a very free-blooming hybrid, and we can scarcely conceive two shrubs more beautiful when in blossom against a wall in spring than a plant of the old species, and the present new variety.—*London Florist.*

FROGS.—The edible frog (*Rana esculenta*) is brought from the country, in quantities of from 30 to 40,000 at a time to Vienna, and sold to large dealers, who have conservatories for them; these conservatories are large holes, four or five feet deep, dug in the ground, the mouth covered with a board, and in severe weather with straw. In these, even during a hard frost,

the frogs never become quite torpid, they get together in heaps one upon another instinctively, and thereby prevent the evaporation of their humidity, for no water is ever put to them.

A FAIRY SPOT.—A small quiet nook nestled among trees, and carpeted with green around. And there a brook should murmur, with a voice of out-door happiness, and a little garden brimming over with flowers should mark the days and weeks and months with bud and blossom; and the worst injuries of time be fallen leaves. And then, health in balm should come about my path, and my mind be as a part of every fragrant thing that shone and grew around me.—*Douglas Jerrold.*

THE LESSON OF THE GARDEN.—A garden is a beautiful book, writ by the finger of God; every flower and every leaf is a letter. You have only to learn them—and he is a dunce who cannot, if he will, do that—and join them, and then go on reading and reading, and you will find yourself carried away from the earth to the skies by the beautiful story you are going through. You do not know what beautiful thoughts—for they are nothing short—grow out of the ground, and seem to talk to man. And then there are some flowers, they always seem to me like over-dutiful children: tend them ever so little, and they come up and flourish, and show, as I may say, their bright and happy faces to you.—*Ibid.*

I SAY, Mick, what sort of potatoes are those you are planting? "Raw ones, to be sure—your honor wouldn't be thinking I would plant boiled ones."

A DRINKING man had a loose potatille look. It was plain, said a wag, that his face, like hot house fruit, had ripened under a glass!

Notes for the Month.

VINEYARD CALENDAR FOR JULY.

BY R. BUCHANAN, CINCINNATI, OHIO.

THE duties of the vine-dresser this month are merely a continuation of those recommended for the last. Summer pruning; tying up the branches to the stakes; and keeping the weeds down by light hoeing or plowing.

The two canes, or branches of the new growth, intended for bearing wood next year, will reach the tops of the stakes about the middle of this month. Train them across to the next stake, and let them grow. It is injurious to shorten them in, as the fruit buds for next year might swell prematurely.

This is the month to expect rot. Plenty of light and air, provided for in training the vines, and perhaps the sulphur remedy, as heretofore recommended, may, in some measure, prevent that disease; but scarcely any treatment or application can entirely conquer what arises—like the rust in wheat—from atmospheric causes. The treatment of wine this month is the same as before stated. "Keep the cask full, and the bungs tight." Burn a sulphur match in each empty cask once a month, and bung tight. This match is a strip of rag or brown paper submerged in melted sulphur—an inch wide; and two inches long, will be enough for each cask.

In the directions for June, "branches" was printed for *bunches*.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

HYBRIDIZING.—The improvement of vegetable races by hybridizing is one of the most direct and important means which we possess in modifying and adapting them to our purposes, and a subject worthy of special attention. The field of experiment is boundless, and some sections of it have scarcely been trod upon. The florists of the old world have, by this means, enriched their parterres and green-houses with an endless variety of flowers, and, by perseverance and assiduity, attained a degree of exact application of the process, which has been attended by results at once hopeful and suggestive to those who desire similar improvements in objects more worthy the attention of utilitarians.

The improvement of the various kinds of fruits, and their better adaptation to domestic purposes, is a section of this field which presents enticing inducements to the experimentalist. It may safely be presumed that none of our available fruit productions have attained the highest degree of excellence of which they are capable, nor do they afford the variety, or continue their productive season to the extent which is evidently possible. We have fruits which, indi-

vidually, possess certain desirable properties, associated with qualities equally tending to depreciate their merits. Thus size is almost invariably united with deteriorated flavor. Earliness, again, is frequently the only merit of some, and, from the experience and success of the past, there is abundant evidence of the possibility of one variety possessing the combined excellencies of those already existent. Take, for instance, that most desirable and available of small fruits, the raspberry, and originate a variety with the adaptability for general culture and hardihood of the Allen, combining the luscious flavor and size of the Orange and Fastolf, having in addition the continuous fruiting character of the Catawissa, and we should have a near approach to perfection in this fruit.

Currants and Gooseberries are susceptible of much improvement; while the strawberry season is very short, new varieties later than any we now possess might be obtained.

The native grape, above all fruits, offers great inducements to the hybridizer. We have not, as yet, a standard grape possessing the qualities of a fine table fruit, uniformly productive and perfectly hardy. By hardiness, I do not mean, exclusively, their ability to withstand the colds of winter, but the possession of a constitutional vigor that will be proof against such destructive maladies as mildew and rot. When we produce a grape of the size of the Isabella or Catawba, with the flavor of the Diana or the Delaware, and entirely hardy, it will be an acquisition in our fruit lists. A good native wine grape is one of the greatest desiderata of the times, and, from present indications we have reason to hope that it will soon be supplied.

The operation of hybridizing plants consists in fertilizing the stigma of the flower of one plant with the pollen of another of allied kind; if these two flowers are from plants having different characters, the effect will be to originate a new form, possessing properties intermediate between its parents.

With many plants the operation is attended with some slight difficulties, and in all a delicacy of manipulation is required which deters, in some measure, experiments of this kind from becoming general; but carefully conducted operations will be certainly followed by valuable results.

Accidental hybridization often occurs through the agency of insects and other causes: it is very common to find one berry in a bunch of grapes larger than the others. It is presumable that a greater portion of developing agencies has been concentrated in such berries, and, by saving and sowing the seeds, a superior production may be obtained. Currants, raspberries, strawberries, &c., may be rapidly improved by this means—saving always the largest berry on the plant; and if every cultivator of fruit were to carefully select and plant the seeds of the largest specimens, an improvement would speedily be effected.

STRAWBERRIES are very productive when planted on deeply trenched soil only moderately enriched with putrescent manures. A rich surface soil without depth will produce a large amount of leaves, but will not ripen a proportionate quantity of fruit. Dry weather will injuriously and speedily affect a shallow soil, no matter how rich it is; but when the roots can reach a depth beyond the scorching of a week's dry sunshine, the crop will ripen equally and satisfactorily. The end of the month is a favorable time to form new plantations. Many of the later foreign importations are "promising well;" but for general use we must still plant chiefly of native seedlings.

SUMMER PRUNING.—In growing plants into particular shapes and forms, the advantage and expediency of summer pinching or pruning of the young shoots is very apparent; as I have remarked before in these pages, many beautiful shrub-like plants may be produced by setting out small plants of such trees as the sour and sweet gums, sugar and red maples, or indeed any tree, and keeping it low and bushy by constantly repressing growth during summer. Trees with fine colored foliage are preferable. So with evergreens. We lately saw specimens of Norway fir, which have been for several years deprived of their leading shoots. They formed splendid masses of foliage, and could not be excelled for filling up shrubberies and close plantations. This is a feature in ornamental planting which we are desirous of seeing extended, as a ready method of producing effects, where close masses of low growth are desirable.

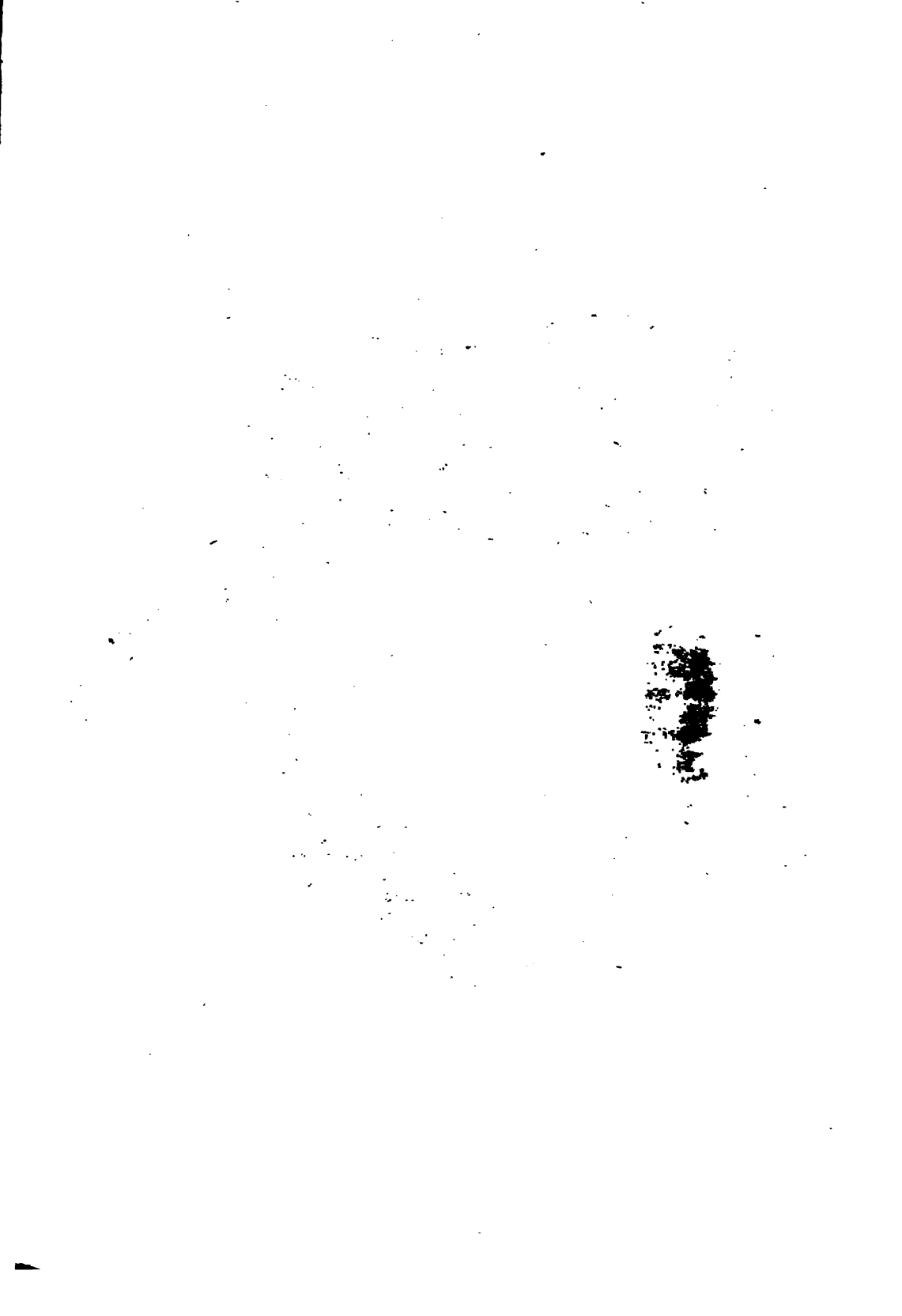
It is but the work of a moment to check the growth of a luxuriant shoot by pinching out its point in passing. By doing so at an early period, it not only checks the vigor at that particular point, but induces a stronger growth on other portions of the plant. Those superb specimens of green-house plants which occasionally grace the tables in the exhibition rooms of our horticultural societies, are produced by judicious pruning during their growth. Those who have an eye to symmetry of form and composition will at once detect and correct irregularity of growth; and the man who knows how to enjoy a garden, and has facilities for gratifying his taste, does not

"Govern only, or direct,
But much performs himself. No works, indeed,
That ask robust, tough sinews, bred to toll,
Servile employ; but such as may amuse,
Not tire, demanding rather skill than force."





KINGSESSING PEAR



Reciprocity: the Country visiting the City.



IS it fair that we should be always harping on the advantages that citizens derive from the country? That we should ignore the pleasures and information which may be obtained by country folks, however refined, in a visit to the town. Are we not too much in the habit of hugging our own enjoyments in rural occupations, and of looking askance at the "poor souls" confined in that penitentiary composed of brick walls hung with birds in cages?

Perhaps it is so, but the country people cannot be accused of undervaluing those advantages which a city afford. A London alderman at a city feast drank with gusto the toast of "the blessings of Providence," with an "Ah yes—that is where our turtle comes from;" in allusion to the island of New Providence, famous for its export of *the* material for soup! So we who "go to town" for our books and other mental condiments, should not look down upon the spot which not only fills our heads with information, but also supplies us with the true "fashion," whether of manners or ribbons. But we are afraid the majority of country people visit town to be amused or to shop. An opera sung by the woodrobin and blackbird we do not enough consider as amusing as the notes of the newest *prima donna* or the everlasting bones and jokes of the white-nigger, whose occupation seems to have taken root and to flourish better than some of the foreign evergreen trees. Music is the product of closely packed communities; in the country we have to be like the French author, who said when he wanted books, he made them himself!

But great cities are also the great storehouses of Art and Knowledge. In America, we have the Dusseldorf Gallery, &c., if we have not much in the way of the most world-renowned pictures to study; we are fortunately situated in regard to books, and can have, and do have, as good books and more easily accessible libraries, cheaper printing, and a more general love of reading, than the old world can boast. True, masses of the books that are disseminated among our rural population are worthless, but appreciative persons are growing up in every section who can distinguish the good from the bad, and these love a trip to town; their "bundle," if you will notice it in the car, is not composed entirely of bonnets or hats, seeds or baskets, but contains material for thought and study. A good turn-over of a well-furnished book store, is to our notion, a better preparation for a rainy day in retirement, than a morning passed in pulling to pieces the shelves of Stewart, Levy, or any of their compeers in Broadway or Chestnut street. Then there are natural history museums, such as the Philadelphia Academy of Natural Sciences, where all the known birds are collected and displayed in the perfect beauty of their plumage and attitudes, and in greater variety than in any other city; where are assembled specimens of the world's geology and botany, and a vast amount of the true scientific books which the best students of nature have left us as their gift of wealth for generations. There may mostly be found the learner, drinking in bit by bit the scraps collected by previous searchers, combining, adapting, and appearing to quench a thirst, which, however liberally fed, is unquenchable, when once

the mind begins to expand and survey the Creator's works with an enlightened eye.

To cities, then, we must resort, and forget their disagreeables, in order to bring home materials to wear and to read. Lectures may be heard to advantage there which cannot be listened to in the country, though for our own part we prefer to *read* six or ten, which we can do in the time required for *attendance* on one.

In the city too, may be found the best productions of the country, there centered as in a mart where all can see and be satisfied ; it is, in reality, no uncommon thing for the suburban farmer to send to the city for choice productions which he has not succeeded in raising quite as well as some one else ; a piece of fine beef, an ice, or a pine apple, often make their way to the farmers who might be supposed to possess at least the two first in their own neighborhood. An exchange is thus perpetually going on, to the advantage of both town and country.

There is one drawback to country people in their trips to town which needs a remedy. Citizens can come to rural scenes and obtain boarding for five dollars a week, more or less ; but when rurality is to be exchanged for the city, especially in winter, the best boarding houses are either filled, or so expensive as to repel, rather than invite one ; and two dollars and a half a day at the hotel counts up faster than the potatoe or parsnip crop will admit. Ladies too who visit the city for a day or less are sometimes sadly puzzled to get a respectable dinner. Their modesty will not permit them to obtrude on a private family, and as a general rule our American towns are very imperfectly supplied with good private restaurants.

What we sadly want is a system of "furnished apartments," such as you can hire for a dollar a day, (including a sitting and bed room,) with the privilege of purchasing from the owner any description of food you fancy or require at moderate charges. You can breakfast on tea, bread and butter, or toast and an egg, for twenty cents in very aristocratic lodgings in any part of the continent of Europe, while if you stop at the Girard House or the Clarendon, very likely you have to pay a dollar, though you take nothing more. This European plan creeps in by degrees in Philadelphia and New York, but has not yet become so common as to give one a choice either of locality or accommodations. Thousands of country people would like very well to pass two or three of the colder months in city society and surrounded by city comforts, books, pictures and music, but can find nobody who is willing to take moderate compensation.* Travellers are paying *daily, by thousands*, twice as much as the worth of what they receive in the way of food and accommodation. If persons in moderate circumstances would receive such during the travelling season in their houses, space would be left in the same apartments in the winter, when the rush of travel is over,

* The political economy, (we use these words for want of better,) of the matter is to be considered. These exteriors of houses are so well finished, and the furniture so costly and well polished, for gullible people to see. We are just as comfortable, and more so, writing on an old friend of a desk, and wearing a most easy office coat, and using the light of a window pierced in a stone wall, as if the desk was of malachite, the coat trimmed with gold lace, or the window ornamented outside with lapis lazuli. It is well to take pride in the possession of precious and enduring things, instead of perishing things. We never could see the comity or appropriateness of lodging travellers, who at home live in wooden houses, in marble caravanseras, whose annual rents would purchase a principality. The interest of the money expended on the outside would be much better employed, in some instances, in the utmost attention to cleanliness within. We should not then hear of infested beds, and nests of mosquitoes and expensive ornamentation without. We never enter a marbled-faced hotel without a feeling that on our next visit we may find it tumbled into the street to make way for something even more polished costly, in obedience to the so-called progress of society. Take off the interest of what is for show only, and extend the sum for comfort. Many hotels are not deficient in this quality, but they could give the same accommodation for a third or fourth less if they would give up mere *outside appearances*.

for those who cannot endure cities when nature is dressed in her best. We have remarked abroad extensive arrangements of this kind. Knowing travellers on a tour of pleasure in Scotland, for instance, are picked up at modest private-looking houses, where a clean bed and a good breakfast have been furnished for shillings, where the hotel has taken dollars for nothing more whatever. There should be no complaints of want of occupation, when such sources of respectable independence are open in all cities for honest people.

If it is the particular province of our Journal to look most to rural and suburban affairs, we are still too dependent upon cities not to feel an interest in what is going on there. Country people pay no small portion of the store-rents in the city : connected with this subject, we have a word to say. A custom prevails in America of paying very high rents for places of business when there is no necessity for such enormous outlays. Not to be invidious, we would ask why the business of selling paper hangings, taking this as an average amount of trade, should oblige the vender, to be successful, to pay three or four thousand dollars for his store. Every piece of paper hangings he vends must have a charge upon it for this rent, which the purchaser must pay, while if his business stand was in a more private street, and the rent four or five hundred dollars, we might all get a corresponding reduction, or he might obtain a greater profit. This, and a hundred other instances might be adduced, in which not only the citizen but the countryman is unnecessarily taxed. The mechanical dentist must occupy a palace, even if he cannot afford it, or he may be *thought* to be unsuccessful. The price at hotels has already been alluded to ; there is no good reason why we should be lodged for a day or two in passing through a city, in its most costly thoroughfare, though to be near it would certainly be convenient. Thirty thousand dollars of rent obliges the landlord to look sharp after his income, and induces him too often to charge extravagantly ; he not unfrequently makes out a bill to a traveller who arrives at twelve o'clock at night, that includes an uneaten and undesired supper, simply because it is *on the table*, and you can have it if you ask for it, which you do not ; for this and a bed and a breakfast, if you leave after the earliest dinner hour without partaking, charge is not uncommonly made of two dollars or two dollars and a half. The proprietor *may* be right to do this, if people will submit to it, but the whole thing wants revision. We want clean, comfortable accommodations when obliged to remain in town for a few hours, and we want them at fair remunerating prices. An easy bed and a scentless pillow are of more importance than marble or Pictou stone outside ; and a recent trip to Niagara Falls induces the remark, that it would be infinitely better to lengthen the bedsteads and put a bureau in the rooms, while the music at the dinner table was shortened to furnish the means.

Every traveller on the continent of Europe may see stores in back streets containing hundreds of thousands of dollars worth of goods, where the rents are one-eighth, and the business transacted eight times as large as in many of the flashy stores of Chestnut street or Broadway ; the consequence is, you there get merchandise at moderate prices. For fancy goods in America, it may surprise some country people to learn, we pay from four to eight prices beyond their original cost. Such a thing brings such a price in Broadway, and the retail dealers all over the town take their cue accordingly, and prices are high everywhere. We know the answer is, that goods are as cheap in Broadway or Chestnut street as anywhere else ; but if

there was no Chestnut street or Broadway, they would be cheaper everywhere.

Country folks and travellers are sadly treated in cities and at hotels ; it is a branch of public economy that will regulate itself perhaps in time, but so thoroughly convinced are we that some classes *like* the impositions, that were we anxious to make a fortune in haste, we would face a palace with cornelians, purchase a service entire of gold plate, rig out our servants in full livery, and charge five or six dollars a day ; depend upon it the patronage would be unprecedented. Seeing this, we do not condemn the paper hanger who pays the high rent, nor the hotel keeper who makes out such enormous bills ; we condemn ourselves and our countrymen who patronize and encourage unwarrantable outlays in the forms we have indicated. Till the people themselves will enforce a change, they deserve and will continue to be fleeced. But this we do say—there must and will soon be a reform in hotel accommodations, and consequently a reduction of prices. We shall then have what we want, clean beds and wholesome food ; the country will then reciprocate the visits of the citizens, and we shall become a more homogeneous people.

A FEW HINTS ON CHURCH BUILDING.

BY F. C. WITHERS, ARCHITECT, NEWBURGH, N. Y.



N going through our country towns, it is almost a matter of impossibility to recognize the churches, from the fact, that, so little attention having been paid to their characteristic features, it becomes a matter of uncertainty whether the building which one sees, with its white-painted wooden portico, and long windows filled with green shutters is a church, a court house or a private dwelling, all being built after the same model. Every building should be so designed that a single glance may be sufficient to decide its purpose. A church with its heaven-pointing spire, or less pretentious bell-cot, with its mulhioned windows and open porch would offer such a contrast to the surrounding buildings that no one could easily mistake its intention. It should stand in as conspicuous a place as possible, thereby implying that the first or most important thing in men's minds was to furnish a place in which to worship the Deity ; and this building should be set apart for that purpose *alone*, and never—as is too often the case—resound with boisterous laughter caused by a popular lecturer's anecdotes. It should be built of the best materials the locality affords. Stone for the walls is the best, but where this cannot be procured, then let brick be used, with no attempt at a disguise—no paint, no cement, colored and blocked off in imitation of stone, for if we attempt to do this we shall undoubtedly fail.

No one in passing through Switzerland and the North of Italy can have failed to be delighted with the beautiful structures which rise on every side ; now the majority of these are built of brick, sometimes relieved with stone or marble, but in many cases entirely of terra-cotta ; what interest would these buildings ever have awakened in our minds if they had been painted ?

None, whatever ; and so it is with us, if we would that our works should live after us, and in succeeding generations be looked upon with interest, we must work with TRUTH ; we must let this be our motto, ignoring all shams whatever, letting brick be brick, and wood wood ; for of what benefit is it, that we put up our windows in iron or wood, and paint and sand them in imitation of stone ? It must be to deceive man, for God it cannot deceive. Where it is impossible to get any other material than wood, then it should be built accordingly ; buttresses and such like construction which essentially belong to stone, being of no use in wood, should be carefully avoided ; nor should the paint which it is necessary to put on the outside be anything more than quiet colors in harmony with the surroundings of the building.

It seems to have been the prevailing idea that the ancient heathen Temples are the best models for our churches, instead of which they are really the worst ; for, in the first place, The Portico, with its monotonous repetition of column,—copied perhaps from the Parthenon—made of wood and painted white, is inconvenient ; it neither affords protection from the sun, nor from the pitiless blast of a winter's storm ; and, in the next place, to reach the church it is necessary to climb some eight or ten steep steps, rendering it extremely difficult for the old and infirm, (for whom it should be the first duty of the church to care,) to ascend ; especially in the winter when they are generally covered with ice and snow. On reaching the platform, one sees doors, apparently of enormous size, but which on inspection are found to open only half the way down, because perchance the gallery for the "colored population" interferes. The windows are long and wide, so much so, that if the light, even in the darkest days, were not obstructed by the green blinds, it would be impossible to sit in the church with any degree of comfort. The walls are high, and the plastered ceiling flat. These are mistakes our church builders commit, for if the walls were lower, and the pitch of the roof higher, the point of the ridge might remain the same, and instead of an ugly high building without any apparent covering, the effect of the change would be most striking, and the very feature which it is the desire of Grecian architecture to hide, would stand out prominently and distinctly, conveying an idea of shelter, besides being more adapted to the climate in shedding the rain and snow, than a roof of a low pitch. Another fault, and which is especially to be condemned, is the putting the school room underneath the church ; for if the room be above ground, it must necessarily spoil the effect of the building, and if below it, is unwholesome and dismal, and cannot but give a disagreeable impression to the poor children who are compelled to sit in it.

There is no doubt but that Gothic architecture is the most suited for churches, for this style has the advantage over every other in its applicability to all sites and requirements ; it is far more picturesque than any other, and if properly built cannot fail to impart some feeling of respect and awe. There is scarce any one who has walked through an old Gothic church without experiencing some such feeling, which is doubtless in a great measure attributable to the style of the building.

In the selection of material, care should be taken. Stone of some description is generally procurable ; and this, however rough, may be used for the walls, for it is not in the least essential that the outside should be smooth, since then no contrast is offered between that and the inside. The quoins, windows, doorways, &c., should however be dressed, and if possible a con-

trast in color may be used ; for instance, where the main body of the walls is of a blueish tint, then a grey stone, used as above indicated, will be found to have a pleasing effect. Where, however, stone cannot be obtained, then it becomes necessary to use brick, and if only stone can be used sparingly for string courses, buttress weatherings, &c., it will give it a more important appearance, besides breaking up the dullness and monotony of the bricks. If the walls are of stone, a half-brick wall should be built on the inside, leaving a hollow space of at least three inches, which may be bonded together with iron or brick ties, this will allow the plastering to be placed immediately on the brickwork, and be found entirely successful in keeping out the damp. Where bricks only are used, the walls should also be built hollow.

Slate seems to be the best material for the roofs, and where these are laid in patterns with slates of two different tints, they look well. Undoubtedly the best covering, (but which unfortunately is unknown in this country,) is tiles ; these are made, and most generally used in England in preference to slates ; they make a most beautiful covering, and the joints being of the thickness of nearly an inch, give a great many lines of shadow. Shingle should never be used, saving where the building is of wood, as they never last more than thirty years.

The roof should in all cases, where possible, be exposed to view from the inside ; its timbers should be wrought and moulded, and when nothing better than white pine can be obtained, a little stain, to bring out the grain of the wood, should be used ; paint as an imitation of another wood, never. In all cases where the timbers are shown, it will be found to be absolutely necessary to have a space of at least six inches between the boarding and the outer covering, and this may be rendered more effectual in keeping out the cold and heat by filling the space with saw-dust or some other such like non-conductor.

The plastering which it is necessary to put on the walls, should be in rough stucco of a light cheerful tint, but in no case jointed to imitate blocks of stone.

The windows should be glazed in diamond quarries in lead, and if possible, stained glass should be used, not only for the purpose of decoration, but to do away with the necessity of outside or inside blinds. Stained glass can be obtained from one to six dollars per superficial foot.

The seats should be open, with moulded bench ends without doors, raised some three or four inches above the passages, which should, if possible, be laid with encaustic tiles.

The engraving which accompanies this, is intended to illustrate an Episcopal church suitable for a small congregation. The plan will be found to consist of a Nave, Chancel, Roving Room, and South Porch ; the material employed should be rubble stone laid in random courses, with free stone quoins, window and door dressings, &c. ; additional effect may be obtained by introducing bands of the free stone at the cill and springing of the windows, &c. The Bell Gable marks distinctly its purpose, and is far preferable to an attempt at a tower and spire where, (from a lack of funds,) it has to be built of wood. The Porch, which is open, should be of oak, unless the church is in an exposed situation, when an inclosed one of the same material as the body of the church should be used.

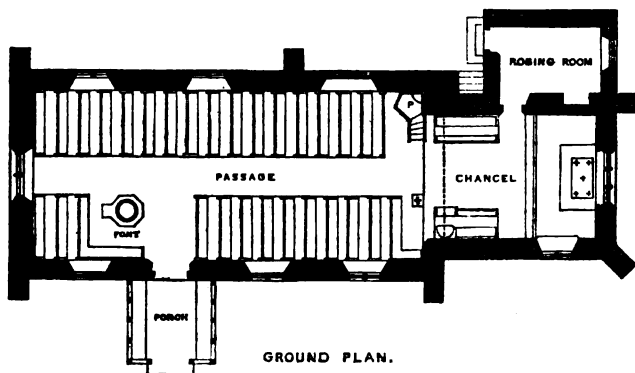
The Chancel should be separated by an arch of stone, consisting merely of a couple of chamfers, and should be raised one step of six inches at least.

DESIGN FOR A CHURCH.

F. C. WITHERS, ARCHITECT.



SOUTHWEST VIEW.



GROUND PLAN.

The correct place for the Font would be near the entrance as shown on the plan.

The cost of the church would of course vary according to the material used, as well as the locality ; in this district however, it might be well built for about \$6000. Accommodation is afforded for one hundred and fifty persons.

LAYING OUT GROUNDS.

BY HOWARD DANIELS, NEW YORK.

I WAS much pleased with the few words from Mr. William Saunders, in the June number of the *HORTICULTURIST*, on laying out grounds.

Several years ago, the late J. C. Loudon proposed to re-publish the writings of all the best early English authors on landscape gardening, and procured the copyright of Mr. Repton's works, and re-published them in one volume. With the others he made some progress, but his great work, the "*Arboretum*," involved him so deeply that he never commenced the re-publication of the older, and, in many respects, the better authors.

These old works are very scarce, and are procured with difficulty at high prices. An enterprising American publisher, who would carry out Mr. Loudon's idea respecting them, would do much more towards forming a correct taste in gardening than all the *milk and water* treatises (compilations ?) that have appeared in this country.

Mr. Saunders truly says, "All our essays on rural taste and landscape gardening seem to be deficient in general practical details, while at the same time they do not enter sufficiently into elementary principles."

Mr. Edward Kemp, of Birkenhead Park, has lately brought out a new and much enlarged edition of his little book on "*How to lay out a Garden*," illustrated with more than two hundred engravings, which can be procured at the office of *The Horticulturist*. This work contains more practical knowledge on the art of gardening than any other book with which I am acquainted. To Mr. Kemp are chiefly due the many fine features and charming effects produced in Birkenhead Park, originally a very unpromising piece of land, but now the finest park of its kind in the world.

ROOTS.

BY PROF. J. W. DARBY.

DR. CLOUD—DEAR SIR,—To learn the conditions of success in the pursuit of any object, is certainly a matter of prime importance ; even if success might follow, nine times out of ten, without such intelligence. Merely empirical efforts, when many conditions are combined, add nothing to the general fund of knowledge, and can be of no permanent value. To observe, with the utmost care and accuracy, every phenomena presented in the growth of a plant, adds nothing to our comprehension of the *conditions* of its development. To plant a grain of wheat, or seed of cotton, and record the changes that follow through the periods of its germination and growth,

teaches us nothing with regard to the real influences that have operated to produce these results. To describe the soil on which plants grow, and give every element that enters into its constitution, is of no value unless we knew what elements are the active ones in the production of the desired vegetation. After all this painstaking, one may assert that the influence of the moon was the great exciting cause of all these recorded results. To add masses of fertilizers, and produce large growth, is of little value when the rationale of the action is left out of sight.

A point of the highest import is to determine a single isolated element of success, or point out one injurious or useless agent in our applications. If a plant is growing subject to three distinct agencies, and by the operation of all it will do tolerably well, yet the action of only one of them is the true and only cause of success, one, perhaps, being neutral, the other, we may suppose, positively injurious. To know these facts would certainly relieve the operator of much embarrassment, and make his calling a much more rational pursuit. One single step in this direction of elimination, though a short one, and made with the light of truth shining upon it, is worth a thousand long leaps in the dark, with guidance of complicated experiments, which are perfectly unintelligible to those who make them. *That* one step is a movement forward; the others may be in all directions, and when the thousandth one is taken we may be at the place of starting.

There are facts in vegetable physiology, that should be of the highest practical interest, which influence most materially the results obtained, but for which, so far as we know, they have neither credit nor regard. Does the agriculturist, in the preparation of his ground, ever take into consideration the kind of roots the plants have which he is to cultivate? In his combination, separations or succession of plants for cultivation, is an imperfect element to guide his decisions and operations. Judging from books on these subjects, we should be led to believe that if there was any difference in the character of roots, it was entirely disregarded in practical applications. To see the almost identical directions given for the cultivation of rhubarb and asparagus, for example, is abundant proof of this disregard. Asparagus is a surface feeder, and wants room and not depth, and it will grow luxuriantly, as we have proved by experiment, on a shallow soil, if plentifully supplied with fertilizing matter and moisture. Rhubarb, on the contrary, is a deep feeder, and to develop its proper growth, requires deep cultivation, and will not succeed without it. The active roots of the asparagus are, in the main, but a few inches below the surface; while the rhubarb will be found two feet, if the soil is fitted for it to penetrate so far.

Nature has made the roots of cultivated plants on two models or types, and to one or the other of these types they may all be referred. One of these is a main root, running perpendicularly downwards, and sending off new branches from the top to the lowest extremity, the central axis being always the predominant one through which the nourishment passes. The other type is a more or less complete subdivision of the root, immediately beneath the soil, there being no main axis penetrating downward. The first kind is represented by the branching of any tree, from a main trunk; the latter like that of some shrubs that send up numerous stems with no main axis. The *first* of these seeks its nourishment deep down in the soil, the *latter* near the surface. The *first* draws its nourishment from immediately beneath itself, the *other* literally from a distance. The *first* is not much injured by removing the surface roots, the *latter* wholly depends on them, the upper

always being the most vigorous. No matter how many varieties there may appear to be, nor how many different names the botanist may give to these varieties in describing plants, yet all fall within one or the other of these classes, or approach more or less clearly these types. The deep feeders called *tap rooted*, the surface feeders called *forficulated*. There is an evident design in these structures, relating most certainly to the conditions of growth and development of the plant.

The above are *facts*, and their application may be made useful in a thousand ways, a few of which we will point out.

If a tree is to be set in the neighborhood of a garden, or cultivated field, the tap-rooted variety should be selected. It will seek its nourishment below the roots of field and garden culture, or it may be made to do so by cutting off the surface roots within the reach of any other plant. The oak, elm, sweet gum, cedar and pine are of this class. The mulberry, china tree and ailanthus are surface feeders, or with forficulated roots, and will destroy all within their reach if they grow thriftily themselves, for in cutting off their roots their growth is checked, unless the soil is very rich.

In planting trees to make the thickest shade, a mingling of the tap-rooted and forficulated will greatly contribute to this end. They may be planted much thicker than either could be alone, by planting them alternately. An oak and a mulberry could both occupy the same space that would be required for either by itself. The oak getting its nourishment deep down in the subsoil, the mulberry feeding at the surface, so that they would not interfere with each other, each growing as though the other was not there. Trees with tap-roots are usually tall and make our best timber, while the forficulated are low, with bushy heads. The one is made to resist the storm, although most exposed, the latter keeps near the ground.

Trees with tap-roots are much more difficult to transplant than those of the other variety, and a different course should be pursued in the operation if we would ensure success. To remove the oak or pine, a deep hole should be dug round the tree, and as near as possible the whole of the tap should be taken up, and the tree transplanted to a hole as deep and as large as the one from which it was taken. But in removing the mulberry, we only need to cut off the surface roots, at some distance from the stem, and turn up the roots and remove the tree to a broad, shallow hole, and the whole is accomplished that is demanded by the nature of the roots. To transplant them with intelligence, we should know with what kind of roots we have to deal. The relation of leaves to roots determine the appropriate *time* for transplanting. Those plants that have active leaves, like all deciduous land plants, can only be transplanted during the season of rest, or before the leaves are expanded in Spring, as the leaves exhaust all the sap at once when the roots are severed. On the other hand, those trees, like all the cone and fir tribes, can but be moved when the plant is in activity, as it is then full of sap and immediately puts forth new roots—the leaves not exhausting the supply of sap.

In planting and making crops, these facts have important applications. Corn is most emphatically a surface feeder, and cotton is a deep feeder. The tendency of corn roots is upward, all new roots in the corn are above the old ones. Those roots that afford it nourishment, that ripens the corn, are the most superficial roots. The roots under the stalk, or first roots, are dead. Cotton is the reverse. The newest roots are the deepest. They are developed downwards, if they meet with no physical obstruction. These

facts teach us that in planting corn, the seed should be deposited at least as low as the ground surface of the soil or land, that the roots may spread out naturally. Cotton, on the other hand, may perhaps be planted on ridges, or elevated beds, as its tendency is all downwards ; it gets more depth by this arrangement. It teaches us the advantage of deep ploughing, for cotton especially, although corn even will be benefited under ordinary circumstances by the same process, although it does not require it if it can be supplied with food and moisture without. The fullest product may be obtained from corn when it is planted on an impervious slate, provided the other conditions are fulfilled. Cultivation should evidently be modified by these different tendencies of roots. It is evident that deep working in corn must be injurious, and it is equally evident that close ploughing, after the plant is well grown, must do harm, by severing the new roots intended to perfect the grain. Neither of these things may be regarded in the cultivation of cotton. Deep and close ploughing may be useful to cotton, if the first ploughing before planting was much deeper. We may modify the development of roots by management, especially in corn. It is a principle in the vegetable kingdom that if you destroy one organ in any place, greater development will take place in the second organ in another. So if you cut off one root, more will issue in another place. Now, corn is readily affected by drought, because its roots are naturally superficial. To diminish this superficial tendency, these upper fibres may be removed by hoeing and ploughing, and deeper fibres will be developed. If this is done while the plant is vigorous and in the earlier stage of its growth and continuously, the corn will seek its nourishment much deeper than is natural for it, and hence when drought comes, the source of supply is not so readily affected as when no such management has been practiced.

We are taught also the benefit of observing the soil around the corn stalk and the uselessness of it in cotton. By hilling up the corn, we supply nourishment to the latest and newest formed roots, provided the soil is taken from beyond the sphere of the older roots. Corn also wants area, as its roots are all lateral, and hence suffers greatly by being too thick. The same is true of all kinds of grain.

In watering plants in our gardens, it should not be applied indiscriminately, regardless of the *kind* of roots we have to deal with. The water for vines, as strawberries, melons, cucumbers, should never be applied to the main stem, but a distance from it, for the mouths are there for drinking it in ; but in the radish, beet, rhubarb, &c., it should be applied directly to the main root, that it may go down the root to the mouths beneath.

Advantage may be taken of this distinction of roots in planting or sowing two kinds of vegetables together. This has long been practiced in regard to herds grass and clover, the former a surface feeder and the latter a deep feeder. It would be interesting to know how this practice originated, whether from reason or an empirical result. The fact has been known, probably, for centuries, although we have never seen a reason for the beneficial results. It is well known that this practice yields a vastly increased product, and the reason, from the facts stated, is evident. The herds grass feeds as though there were no clover, and the clover feeds as if there were no grass.

In the cultivation of fruit trees, these principles are of high practical interest. The nurseryman understands that he can, in some measure, convert the tap-rooted fruit trees into the forciculated. He accomplishes by

this result two objects. One, that his trees will live more certainly when sold. Another, those trees that remain unsold, are kept in a dwarf condition for several years and are fit for sale, which otherwise would become too large. He attains this end by cutting off the tap-root, by means of a sharp instrument thrust under the tree. The tree thus used lives, it is true, but its main root is gone and will never be reproduced. The tree, that nature formed with a strong main root that it might withstand the force of storms and have unharmed its burden of fruit, is mutilated and deprived of its characteristic and essential organ, which by art is replaced by one in no wise fitted for its condition. Who has not experienced this evil resulting from such a practice, that has ever raised a fruit tree? They must be staked or propped up, or they soon stand obliquely or fall down under the weight of fruit. The same course should be pursued in transplanting a fruit tree as in transplanting an oak or pine. We should dig down below the roots, and gather the main root and as many of its branches as possible, and then set it in a *deep* hole; broad, if you choose, but *deep* anyhow. This principle teaches us, also, the earlier fruit trees are set in the places in which they are to grow, the better. If the ground were prepared, and the seed, for the stocks, were planted where the trees were to grow, and grafted or budded, in their natural positions, there would be no falling down or leaning trees, if cared for during the first year or two, and we should have fruit orchards for a generation. The practice now pursued, with a rich surface soil, and only surface roots, the tree *out* of the ground, is pushed forward far beyond any means of support developed *under* ground. The two should correspond, and let nature have her own way and she will make them do so.

In the rotation of crops, in field or garden culture, regard should be had to the kind of roots that succeed each other. The tap-rooted should always succeed the forciculated after fresh manuring. Succeed onions by beets or turnips in the garden; Irish potatoes or beans, by cabbages, parsnips, or carrots.

In the above remarks I do not know but I may have come in conflict with plantation practice in some particulars, but that the principles are correct, there is no doubt, as my experiments, on a small scale, have abundantly proved; and had space permitted, I should have been pleased to have recorded experiments on this subject, especially in the growth of corn and cotton.

In all cases it is presumed that the soil is perfectly broken up, that the whole storehouse of materials is opened to the application of the plant; otherwise the conditions of successful cultivation, of any crop, are not complied with.—*Cotton Planter and Soil.*

ROSES.

Roses vary much according to the character of the season. A Rose which is indifferent this year, and which you feel inclined to discard, astonishes you next year by its beauty; while on the other hand, one that you have thought highly of proves to be worthless on further trial. Thus, last year I had Louise Odier poor and thin in the extreme, very little better than the Celine; my idea was at one time to discard it; however, I let it alone, and this

year it has been very beautiful, full, and brilliant in colour. Had I measured, on the other hand, my old friend Géant by his performances this year I should have pronounced him but a poor leader, for the intense heat completely took away all his brilliant colour; and, again, I have grown for some two or three years Leon des Combats, but I never saw in it anything remarkable; whereas this year it has been especially beautiful. I do not think this is sufficiently borne in mind by amateurs; they do not wait to prove their flowers, and pronounce them worthless, when another season would perhaps make them alter their opinion.

And then *there is the insatiable craving for novelties*.—Have you got any new Roses, is the first question put to a nurseryman; if he say no, you at once set him down as behindhand; if, on the other hand, he shows you some, how readily do you overlook many blemishes because they are new; you persuade yourself that they must be much better than the older varieties; you buy them, and after, when better and cooler judgment returns, you find that you have foolishly preferred a new to an old face—a fault not confined to Rose growers.

VISITS TO COUNTRY PLACES.—No. XIV.

Near Princeton, N. J.



OUR series of visits to Country Places has been postponed for the sake of variety, and in obedience to the demands of correspondents. Princeton neighborhood occupied our last notice, but was left incomplete.

Woodlawn, the seat of Richard Stockton Field, Esq., presents so many features of beauty and good planting, that we return to it once more. Its grand feature is the beauty and symmetry of the evergreens, planted comparatively only yesterday, and really only twelve to fourteen years ago. The

White Pines are thirty to thirty-five feet high, with proportionate breadth, though two of them have assumed the precise shape of the old Lombardy Poplar, growing into a cone-like form which is entirely unusual, and for which no apparent cause can be assigned.

But the beauty is by no means confined to the White Pines. Mr. Field has assembled such a large family of evergreens as we rarely meet with, and he understands their wants so entirely that all seem grateful inmates; the rarer kinds hold a prominent place; the generally naked *Thuja pendula*, or Japan Weeping Arbor Vitæ, here has really a dense and admirable growth. In juxtaposition with this weeping Asiatic, is the *Washingtonia gigantea*, the giant tree of California; (in the open centre of one of these trees, in its native haunt, it is practicable to drive a Conestoga wagon.) We opine that this tree will be one of the most rapid growers of all our hardy evergreens, and are happy to say many specimens inspected this spring indicate its adaptation to our northern climate.

Mr. Field's *Abies Frazerii* is about twenty-five feet high, round-headed,

of a beautiful silvery green, and an exceedingly rare specimen. It is very conspicuous among a cluster of an excellent variety of some of our native red cedar ; it requires a nice eye to detect some varieties of this neglected native from the high-priced and *incense bearing* Juniper of Spain.

The dense-headed Austrian black pine makes a prominent feature amongst other pyramidal trees. The Cedar of Lebanon has always been regarded as one of the stubborn foreigners, but here it grows with almost the rapidity of a White Willow ; in about fifteen years it has attained to the height of thirty feet, and stood *all but* unscathed during two late hard winters. One of the causes we ascertained to be the nature of the soil in which it grows ; this is a prominent ridge of a yellowish loam on a subsoil of gravel peculiarly favorable to such evergreens.

Having in a previous article noticed the principal trees of rarity of beauty, we cannot repeat, but it would be unpardonable if we overlooked, (we cannot forget), a plant of *Juniperus squamata*, the most interesting and curious specimen we have ever encountered. The lower branches form a basin in vigorous growth, with an upright center of about five feet in the exact form of a fountain—an actual evergreen fountain situated in a recess formed by a wing of the mansion. This unique plant would amply repay a connoisseur for a visit to this noble place.

We have another feature in the outline that cannot be overlooked ; the useful has been brought into happy juxtaposition. Pear trees of distinct forms, showing the judgment and care of the proprietor and his assistants, yield abundance of fruit for the home and its visitors. You can from the roads discern the best kinds, and point out the peculiar conical form of the Seckel, the tapering cone-shaped Lawrence, the pyramidal Urbaniste, the large spreading arms of the Duchesse, and the poplar form of the Buffum. This pear tree in the absence of the unwarrantably discarded Lombardy should not be overlooked by the planter who would introduce a useful conical object. It is hinted that the finest Buffum is to give way for the contemplated new pinetum, but *that* one specimen we hope may be spared.

Princeton and its vicinity contains many beautiful places, and is historically interesting from its colleges, and the worthies of note who have successively filled its learned chairs.

Morven, the property of Commodore Stockton, is a fine old place of the times of the Revolution, having been in the family ever since the first settlement of the State. It was a part of a tract of land purchased of William Penn by the Commodore's ancestor more than a century and a half ago, and has now some fine Elms planted by the signer of the Declaration of Independence, Richard Stockton. A row of very large Catalpas, extending more than a quarter of a mile, were in full bloom at our late visit, presenting a magnificent appearance. The proprietor resides alternately in Philadelphia and at the sea-side. *Morven* has consequently been somewhat neglected of late, and it shows the effects.

Prospect, late the residence of Thomas F. Potter, and now that of his widow, is on a fine site overlooking the county of Monmouth ; the view is so extensive that it is easy to fancy one's self in sight of the sea, which in fact is not very distant. Mr. Potter died soon after the completion of the mansion, which in all its details exhibits the good taste of its architect, Notman, who has introduced a conservatory attached to the house, and a fine grapery now very productive, that adds material beauty to the winter scene ; the grounds possess great capabilities.

Mr. Senator Thomson's residence is almost in the town, consisting of about four acres, well planted and giving many fine effects. A visit to it convinces the eye that it possesses the requisites of a country seat. There is a fine collection of evergreens, a grapery and green house, and everything is kept in the finest order. *Mr. James Potter* has a place of about the same size; it is also distinguished for its fine evergreens, and has a fine grapery. Here we would remark on the beauty and gentility which even a few evergreens give to a rural scene; they warm up everything near; without them, dreariness comes over the eye and the spirits.

The places of *Richard Stockton*, and *John P. Stockton*, (the latter now our minister to Rome,) sons of the Commodore, are comparatively new, but are largely planted, and their trees are growing finely. *Notman's* taste is here again apparent.

Of *Princeton College*, we could say much, but may only note a few of its celebrated Presidents. The first was *Jonathan Dickinson*, whose appointment was made in 1746, and from whom descended our townsman, the late *John Sergeant*.

Aaron Burr succeeded *Dickinson*, having married the daughter of the celebrated *Jonathan Edwards*; he left a son, the too celebrated *Aaron Burr*, who in spite of his illustrious parentage, became what we know him to have been. The residence of President *Burr* is still extant; and the murderer of *Hamilton* rests near by.

Jonathan Edwards succeeded his son-in-law as President. His reputation is world-wide, and needs no comment here. *Samuel Davies*, *Samuel Finley*, *Dr. John Witherspoon*, *Dr. Samuel Stanhope Smith*, *Dr. Ashbel Green*, *Dr. James Clernahan*, and now *Dr. John Maclean*, have each and all added to the fame of this celebrated seat of learning, which numbers on its roll of alumni very many eminent scholars, divines, lawyers, and politicians, and is still in the full career of its usefulness.

NEW PLANTS.

BEGONIA REX. Nat. Ord. *Begoniaceæ*.—No description can give an adequate idea of this, the most striking of all the *Begonias* we have seen, which throws every other into the shade, and fully justifies its specific name, being decidedly the "King" of this fine tribe. Its great attraction consists in its splendid foliage, which measures about ten inches across, the centre of a deep olive-green, reflecting a metallic blue, surrounded by a broad silvery white band, which is again encompassed with a wide edge of olive-green. The flowers are also of large size, and rose-colored. It is a native of *Assam*, where it inhabits the temperate region of the *Himalayas*, and was discovered by *Mr. Simons*. *Messrs. Rollinson* possess the stock, and are about to send it out.—*Botanical Magazine*.

CAMPYLOBOTRIS ARGYRONEURA. Nat. Ord. *Rubiaceæ*.—A charming little species, growing six or eight inches high, and closely allied to *C. Discolor*, but distinguished by the silvery nervures of the leaf, the edges of which are (especially in the case of the young ones) margined with rose, and fringed with ciliæ of the same color; their upper surface is of a fine olive or brownish green, with a satiny appearance. It will be cultivated chiefly for its beauty as a plant with ornamental foliage. From *Chiapas*, where it was detected through the indefatigable zeal of *Mr. Ghiesbreght*.—*Ibid.*

RUSTIC FURNITURE.—SECOND ARTICLE.

IN apple wood, gnarled and bossed into natural rosettes by frequent pruning, and nature's efforts to heal the wounds, will be found material well suited to the purpose of making Rustic Furniture. The old wood of *Kalmia*



FIG. 6.

Figure 7, an arm chair. Care must be taken that sufficient symmetry is preserved. Employ the same means as suggested for No. 6, in the last number. The two front legs, it will be observed, are braced by natural limbs, and the arms have been selected from what would have formed "knee joints" for the ship builder, had they remained long enough in growth.

Flower baskets, such as shown at figure 8, may be manufactured by covering old butter firkins, or other packing cases with split hazel rods, either perpendicularly applied, as trellis, or in any other decorative arrangement; taste in such matters speedily growing with the exercise of the habit of construction.

Fig. 9 is produced by employing the same means with the base, and by taking a hoop to attach upright slats made as fancy may direct or employing hazel rods.

from the Southern swamps is much employed in Baltimore, where an extensive manufactory has been established by an individual who began in a very small way, but now supplies a large region of country. Pear, plum, and oak, especially the white oak, are also suitable from the frequent bendings and elbows of their growth. The wood should be dry before working; it may be either used with the bark on and a coat or two of paint applied after the manufacture of the article, or the bark may be removed and the work finished with a coat of "outside" varnish. This is far preferable, as the bark, if the paint is not renewed, is apt in a year or two to separate and peel off. By revarnishing in spring they will look "as good as new." Figure 6 is another pattern of a chair.

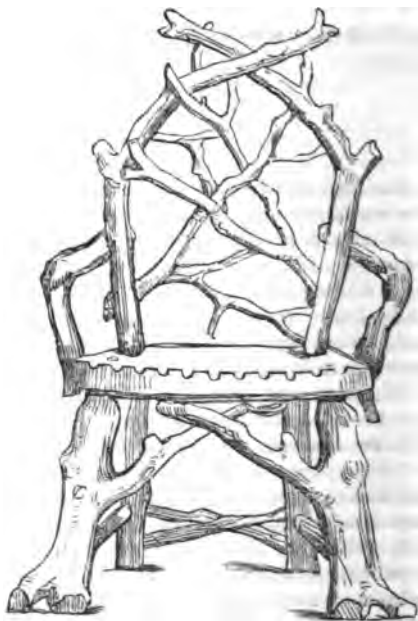


FIG. 7.

The laborer who has tried and succeeded in making some of these simple appendages to his garden will soon be led on to the construction of rustic fences, porches, &c. He will learn to weave the branches into grotesque and picturesque combinations—to pave the floor with pebbles or with short



FIG. 8.

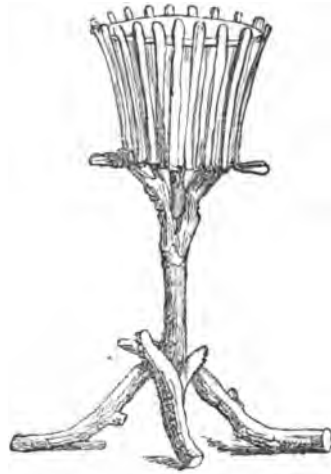


FIG. 9.

pieces of the branch sawn across and placed perpendicularly in sand. With the decoration and improvement of his cottage and garden self respect and comfort in his home will grow, increased by this occupation of his time, and his house will become what it ought to be, attractive to himself and family.

RATS, AND OTHER MATTERS.

SOME people believe that Rats take a tenth of the farmer's produce. They are certainly very destructive pests, both in town and country ; the person who would invent a certain mode of destroying them would confer a vast benefit on his species. The only approved methods are to employ tar around their holes and runs, and if possible to catch one of the enemy, tar him well and let him go, or so to balance the top of a barrel that it will turn easily, and deposit the vermin in water. Among the volumes on our table, is the new London book of Francis T. Buckland, son of the geologist, entitled "Curiosities of Natural History," in which we find two capital chapters ; the first, "A Hunt in a Horse Pond," describing the wonders of insect life ; and the second, an "Essay on Rats." On the subject of traps, he says :

"The iron wire cage traps, and the common hutch traps, are sometimes useful in houses, but they soon lose their efficacy, because after one or two rats are caught, the others find out that it is a dangerous machine and do not go into it. The traps then do more harm than good, because the rats smell the bait, come to it from all parts, and, as we have seen, news flies quickly among them, you get your neighbors rats as well as your own into your premises. They play round the bait, but do not go into the trap ;

then, being hungry, both the strangers and the original rats of the place begin foraging about, and make holes in the corn bins, cupboards, &c. The same thing holds good with the fly-papers ; it is true you catch some of the flies, but you get double your share of flies in the room ; as they are attracted by the poison placed for them."

Mr. Buckland tells a curious story of "the trumpet rat," which has deceived numbers of naturalists, but at last has been found out. They are manufactured for sale to amateurs ! thus : take two rats, tie their hams firmly on a board, the nose of the one close to the end of the tail of the other ; with a penknife or lancet make an incision into the nose of the rat which is hindermost, and graft it into the incision of the nose ; tie firmly the muzzle to the tail, and leave the rats in this position for forty-eight hours. At the end of the time the union has taken place, and the two parts have grown together ; then cut off the tail of the rat which is in front to the required length, and let him go, but still keep the other tied to the board, but with his head loose, and give him something to eat. At the end of a month or more the wound is perfectly healed ; and the eyes of the most curious would not see a trace of the grafting. This is done by Zouaves, it is said ; it is true that the spur of a chicken may be grafted into its comb ; but in the rat experiment, we must say the difficulty of holding the patients still and without biting renders the story apocryphal.

Our author is full of anecdote ; of a certain caterpillar, he says : "There is a genuine case of a living creature becoming converted into a vegetable. It occurs in a caterpillar that lives in New Zealand and in Australia. There are several specimens at the College of Surgeons. We see a caterpillar as hard as if it was carved out of wood, and from it is growing a long stem. The history of it is as follows : The caterpillar eats a fungus, or the sporules of a fungus, and these immediately begin to grow in its inside. The beast feels uncomfortable, and possibly thinking it is going to turn into a chrysalis, buries itself in the ground, and there dies. The fungus goes on growing and absorbing the entire contents of the skin, taking the exact form of the creature. Having done this, it throws out a shoot, and this always at a certain fixed spot, namely, at the pole at the back of the head. This caterpillar is found also in China, where it is used for food."

A barber told Mr. Buckland that he was in the habit of selling the human hair clipped from customers at six pence a bushel to a farmer, who declared that the places where he had put the hair did not require manure for three years afterwards.

HYBRIDIZING.

BY WM. N. WHITE, ATHENS, GEORGIA.

IN the preceding article we endeavored to establish that the vine presents unusual obstacles to cross fertilization. In the present, we shall give the evidence we promised, that hybridizing, though readily effected in certain exceptional and rare cases, is *in general* by no means an easy matter ; and that when effected, the beauty and brilliancy of our greenhouses and flower gardens may be greatly increased ; still the vinegrower or orchardist can expect little benefit. We shall also at the same time endeavor to show why this process has been thus successful in the domains of Flora,

while in those of Pomona "the efforts of the hybridizer are yet to be heard from," and in conclusion, touch upon the most successful method of originating new varieties of fruit.

I. As in the nature of things there are reasons why we should not expect fruitful hybrids to be numerous, for if man could without limit produce crosses, species and genera would soon be obliterated, and unlimited confusion supplant the present orderly arrangement of nature ; so do we find in fact that hybrids are not common, while fruitful ones are still more rare. In the animal kingdom, no man's wealth will be much increased by the progeny of his mules. In the vegetable world, I for one do not expect our markets to be freely supplied with, or our goblets to overflow with, the juices of hybridized fruits. What is the testimony of those botanists who have made this subject a speciality ? "The experiments of Kohlreuter on the hibiscus and cucurbitaceæ prove that there are certain species that cannot be crossed," (De Candolle. Veg. Physiologie, p. 704.) "Many cases are recorded of nearly allied species refusing to intermix. Mr. Knight could not succeed in effecting a cross between the common and the Morello cherries," (species nearly allied, with blossoms convenient for operating,) and Dr. Lindley records his vain endeavors to cross the gooseberry and currant. Such plants as the apple and pear, the raspberry and blackberry, though very closely connected have not been known to intermix," (Lond. Hort. Mag., quoted in Horticulturist, July, 1848.) "It might be expected that hybridization would be much more easy in diœcious than in hermaphrodite plants ; the females, being more removed from the males, ought more readily to receive a strange pollen ; but M. Lecoq remarks, that the observed facts seem contrary to this expectation, there being very few hybrids of diœcious plants ; as if being more exposed to mixture they are protected by an organization more fixed which admits the action only of the pollen of its own species," (D. C. Veg. Phys. p. 705.) "These circumstances" (to wit, different species not blooming together—the necessity of the stamens of the plant acted on being removed, fertilization taking place under special integuments, and the preponderating influence of a plant's own pollen,) "render natural hybridization more rare than one thinks," (ibid. p. 706.) "Hybrid fecundation in general is less perfect than natural. Gaertner cites many proofs. In cross fecundations made by him with the greatest care upon nineteen flowers of *Nicotiana Langsdorfii*, fertilized with *N. Marylandica*, and also in fourteen of the same fertilized with *N. paniculata*, only five succeeded. In nine of the same species, fertilized with *N. quadrivalis*, only one succeeded ; in some cases, however, all succeeded," (ibid, 714.) The *nicotiana*, or tobacco tribe, by the by, is one of the easiest to cross. "The number of fertilized seeds in each fruit in cross fertilization is much less than in those which are natural ; thus the *papaver somniferum* contains ordinarily two thousand seeds, crossed with the *glaucium luteum*, only six were found," (ibid.)

Again ; "Recent experiments have led to the following results : (1.) It is a much more difficult operation to produce hybrids even under every advantage than is usually supposed. The number of species capable of being impregnated even by skillful management, is very few ; and in nature the stigma exerts a specific action which not only favors and quickens the operation of the pollen of its own species, but resists and retards that of another, so that the artist has not only to forestall the natural operation, but to ex-

perience opposition to his conducting the artificial one. (2.) Even when impregnation is effected, very few seeds are produced. Still fewer of these ripen ; and fewest of all become healthy plants, capable of maintaining an independent existence. (3.) The offspring of a hybrid has never yet been known to possess a character foreign to those of its parents ; but it blends those of each, whence hybridization must be regarded as a means of obliterating, not creating, species. (4.) The offspring of hybrids are *almost invariably barren*, nor do we know of an authentic instance of the second generation maturing its seeds. (5.) In the animal kingdom, hybrids are still rarer in an artificial state ; are all but unknown in a natural one, and are almost invariably barren." (Hooker and Thompson's *Flora Indica*, quoted by A. Gray, in *Silliman's Journal*, January, 1856.)

"With regard to the facility with which hybrids are produced, the prevalent opinions are extremely erroneous. Gaertner, the most recent and careful experimenter, who appears to have prosecuted his inquiries in a most philosophical spirit, says, that *ten thousand experiments upon seven hundred species produced only two hundred and fifty true hybrids*. It would have been most interesting had he added how many of these produced seeds ; how many of the latter were fertile, and for how many generations they were propagated." (J. D. Hooker's *Flora of New Zealand*, quoted in *Silliman's Journal*, vol. 17, new series, p. 335.)

Finally, "Any continued effects of hybridization in uncontrolled nature seems to be thoroughly guarded against in two ways ; first, by the *constitutional debility if not the invariable sterility* of the hybrid offspring, rendering it of transient duration ; secondly, by the fact that when prolific at all, they usually become so through fertilization by one or the other of the parents when the offspring reverts to that specific type." (A. Gray, *Silliman's Journal*, 17, p. 344.) Such is the evidence that *in general* hybridizing is no easy matter. Whether the vine is a special exception I do not care just now further to discuss as with the present evidence my own opinion is unchanged. Five years will show, (with so many zealous experimenters in the field,) whether to hybridize it is in general a practicable thing, and whether such hybrids if obtained would be of any value. But these points I will not entirely pass over now.

II. We know there are a *few* genera, such as Rhododendrons, Pansies, Fuchsias, Roses, Verbenas, &c., in which the species do readily hybridize. These genera are very few ; but our critics insist that the vine is one of them. Grant it for the moment, will not "the constitutional debility, if not the invariable sterility of the hybrid offspring" be likely to render it useless in the vineyard ? If a plant, in the greenhouse or flower garden, have even but a moderate constitutional vigor, sterility renders it all the more desirable. In a fertile plant, says De Candolle, the withering and fall of the coral of a flower is determined by a perfect fertilization, and takes place more or less promptly as the fecundation is more or less complete. Then all the accumulated nourishment and juices of the plant go to perfect the seed. If no fecundation, or an imperfect one takes place, a part of the juices of the plant continue to nourish and sustain in beauty and freshness the corollas already expanded, while the remaining elaborated nourishment is diverted to the formation of new flowers. It is from not seeding freely that, in the case of double flowers, each individual flower continues longer expanded before withering, a fresh succession of blooms is thrown up, and

still the plant is far less exhausted than if it had borne seed. Single dahlias continue in bloom but a short time, and each flower is transient, and the small tubers show how little nourishment is laid up for another season. The double dahlia on the contrary, blooms through the season, and in this case, as in general, the more double the flowers of a plant may be the longer will each flower remain fresh ; the more continuedly will it be in flower ; and if a perennial, the better state will it be in for blooming finely the ensuing year. Hybrid plants seldom or never producing perfect seed, their unfertilized flowers retain the nourishment nature destines for the germ, gorging the existing petals with accumulated juices ; another portion of which often goes to develop new petals, rendering the flower more or less double ; or if the plant still remains single, yet from the same cause, (its sterility,) presenting a like persistence, profusion, and renewal of its bloom. To produce and ripen its seed, is the greatest drain upon its vitality to which a plant is subjected. Annuals and biennials, if not suffered to seed, can often be made of perennial duration. On the contrary, who has not seen vines and fruit trees which have exhausted themselves and perished in maturing too large a crop ? But the hybrids of the flower garden being generally subjected to the most favorable conditions as to care and nourishment, especially as they are seldom taxed with maturing seed, can be kept in health and beauty even if there does exist some tendency to constitutional debility. Here, then, hybrids are deservedly great favorites, and the accomplishment of more than we expected from our efforts in hybridizing flowering plants has led us to expect more than we are likely to accomplish by our efforts in hybridizing fruit bearing ones. While our fruit books are filled with the names of chance seedlings of great excellence, *the labors of the hybridizer thus far have given us only the promise of good things to come.* Not a single hybrid fruit is yet in general cultivation.

Do we owe much more to cross-breeding ? Of the nearly three thousand varieties described in the new edition of Downing's Fruits, are there thirty that with any show of reason are claimed to be cross-bred ? Of these, are there over three first class fruits ? All the results of Mr. Knight's trials in crossing the pear, with one exception, (Pengethby,) are placed by Downing in the third class among the rejected. Mr. Berckmans writes me, that "Dr. Brincklé has tried cross fertilizing. I have all his grafts, over five hundred with pedigree and lineage. His chance seedlings from good pears, supercede all his laboriously fertilized ones, most of which present a very dubious character, some being entirely wild, slender or sickly." No one will claim that the proportion of good fruits hitherto raised by crossing varieties has been greater than from the chance seedlings of the same varieties without cross impregnation. If Providence had left mankind from the creation until Knight was born to depend upon cross fertilization for good fruits, very possibly he might have been born into a world where no fruit trees were left to be crossed. They would already have been exterminated as worthless.

To originate improved varieties of fruit, let us then no longer look to hybridization ; for if the operation is successful, the resulting plant is very likely to be debilitated, if not sterile ; neither to cross fertilizing varieties, for the manipulation requires the nicest care ; and, as we have seen, is quite uncertain in its results. Even if as is claimed we could in hybridizing, thereby combine all the separate excellences of the two species crossed, ("and the offspring of a hybrid has never been known to possess a charac-

ter foreign to its parents.") we could at best obtain in the result *only the sum of the excellences of the two parents*. So in crossing varieties. By what blending all the excellences of the two best pears existing seventy-five years since, could we have reached the matchless flavor of Belle Lucrative or Seckel? Could any crossing among our harsh and worthless native grapes by combining existing flavors, have produced such grapes as Lenoir and Warren? And yet without the slightest proof of such intermixture, and still less of a foreign cross, what a number of really valuable native varieties have sprung up the last few years. These fruits are not merely the sum of existing excellences. Even the Isabella is something more than equal to Fox grape plus Summer grape; and in Delaware, Lenoir, Warren, and Rebecca how vast is the advance.

III. How, then, shall new varieties be obtained? Obviously by following the practice of those who already really have succeeded. Let us take advantage of the tendency to sport, more or less inherent in all fruit-bearing plants, that have already left in some degree the wild state, or which, while still wild and harsh, are by cultivation subjected to new influences and conditions. It is not enough, however, merely to sow the seeds of good fruits, as "Poiteau tells us, that Duhamel during the long course of his scientific career planted the seeds of all the best fruits which were eaten at his table, without being able to produce a single fruit worthy of cultivation. The Alfroys had during three successive generations adopted the same course, and with no better success," (Kenrick.) Van Mon's first seedlings, also from the old decayed varieties, such as Choumontel, St. Germain, &c., Mr. Berckmans informs me, gave him no good result, but returned at once to their wild state. He presently found, other things being equal, "the older a pear is of any cultivated variety, the nearer will the seedlings raised from it approach the wild state." "He was more successful in the progeny of these wildings, but still more so when he resorted to the seeds of the then recently improved varieties originated by Duquesne, and Hardenpont, &c. From the seeds of such renovated varieties as Glout Morceau, Napoleon, Marie Louise, and especially Passe Colmar, his best pears were derived. Passe Colmar was considered the standard of good seeds, and its generations have filled our catalogues with most delicious fruits." In originating improved varieties, he found "the art to consist in regenerating, in a direct line of descent, and as rapidly as possible, taking care that there shall be no interval between the generations." He says, to sow and resow, in short, to do nothing but sow, is the practice to be pursued, and which cannot be departed from; and in short this is the whole secret of the art I have employed." Again, "the result of attempts to vary is to ameliorate: a fruit ceases to change only when it can be no further ameliorated, and becomes fixed at its ultimate point of perfection." "I have arrived at a point, as I had foreseen, where, instead of as at first gaining only one good fruit among an infinity of bad, I have only one, or rather no bad among an infinity of good or tolerable." "Those who have followed my method, and sown seeds of my new varieties, have already obtained some excellent fruits." Van Mons tried all fruits, but Mr. Berckmans states, "soon left all except the 'rebel' pear tree. He told me, that after three generations of peaches, plums, and apples, *all were* good and that 'it was disgusting' to stick to such experiments. He was enamored of difficulty, and found the pear just the thing to keep his energy of mind alive." This method pursued by Van

Mons was so successful, that in the words of de Jonghe, "to him we are indebted for a greater number of fine pears than have been handed down to us from all previous ages, and from all the nurserymen and pomologists of modern times." At the death of Van Mons, all his remaining seedlings passed into the hands of A. Bivort. During his life, his grounds having been three times encroached upon by public works, he gave freely to his correspondents in America, Belgium, and France, of his seedlings still untested. Among the recipients were Manning, Poiteau (800 at once). Tougard, Demeraire, Diel, Drapiez, Millot four or five hundred, Bonnet and Leon le Clerc of Laval. From these originated the best of the French (so called) seedlings. In the sum of the results of the Van Mons theory, we must include then not only the great number of choice fruits that have his name attached to them, in our Catalogues and Fruit books, but likewise those credited to Bivort and others who came into possession of his seedlings. Consider also that every year is still bringing for the first time into fruit desirable varieties of the Van Mons collection. Add to these the numerous varieties originated by Esperin, Berckmans, and his other disciples, and tell me if he was not right in his theory, *that the seeds of newly obtained or renovated varieties are more apt to produce good results.* Why in a little garden in Jodoigne, Gregoire, by dropping promiscuously a few seeds of recently obtained varieties of the pear, has reared at least twenty sorts of great merit. (L. Berckmans.)

Before Van Mons or his theory existed, his practice had been in a manner successfully inaugurated. I refer to the successive reproductions resorted to in forming our American orchards (See Downing, Fruits, p. 7). Our fathers brought from the old world seeds of their best fruits. Probably the immediate seedlings of these, like the first trials of Van Mons, returned in a measure to their wild state. Still from the best of these seedlings, the children of the colonists as they moved westward, or opened new lands at home, planted their own orchards. In this manner—by sowing and resowing—have been produced our unrivalled American apples. Even our Cherokee Indians within sixty years have thus raised more fine varieties of the apple ("of surpassing quality," Charles Downing says,) and suited to our climate, than there are cross-bred fruits described in our books. Thus originated such pears as Seckel, Sheldon, Ott, Tyson, Kirtland, Dix, Kingessing, Brandywine, and Washington. Are there as fine ones to be met with among those cross-bred? In like manner have been produced all we need desire in the way of cherries and plums, and a list of peaches Europe cannot rival. In this immediate section, the seedling peach orchards have furnished a list of Clings as large as that of your Catalogue's, equal in flavor, and prolonging the peach season here fully two months. By a collection made in a single season, from a wider area, the duration of good Freestone varieties was equally extended. We have already alluded to the rapid amelioration our native grapes are undergoing. The best of these are of unknown parentage, (except as to the species,) but the Louisa, Mary Ann, Diana, Tokalon, Anna and Emily sprung from recently obtained varieties, while the Concord seems to have been raised from a wilding, exactly on the Van Mons method. So successful have we been in gaining good varieties of fruit by these repeated reproductions, that we could to-day give back to Europe more and better varieties than we have retained of those she has originated.

Is it not, then, evident to those who have followed me through this long article, that if we wish to gain still more improved varieties, we will do

well to sow the seeds of an improved fruit, recently originated, and trust to nature and chance for the result? In this way we have hitherto done passably well. The hybridizers, I wish, may do as well or better. Gentlemen, if you have already done so, bring on your grapes.

MORE NOTES ON PEARS.

BY JOHN B. EATON, BUFFALO, NEW YORK.

Among the few varieties which I had an opportunity of observing and tasting last season, were several of those sorts which have not yet become so widely known as to be considered *old*, respecting which I myself am always glad to obtain information, and assume that the same desire exists with others of your "parish."

The extremely unfavorable season undoubtedly detracted much from the excellence of some sorts, and rendered them smaller than they would otherwise have been. Not less marked was its influence on the gross amount of the crop, leaving many trees which should have fruited without a single specimen, and others with but enough for a taste. Still individual trees were finely loaded, among which I now remember a Doyenné d'Été, a Flemish Beauty, a Bartlett, and a Beurré d'Anjou, which were perfect spectacles of fruitfulness. The two former were standards (planted in 1849), the others dwarfs.

The Beurré d'Anjou I was well pleased with. Although not quite so high-flavored as some of the specimens which I have seen in Boston (and much smaller owing to the large crop), its nearly uniform size, fine appearance, and profusion of fruit, with the fine growth, and habit of the tree, formed a combination of good points much to be desired. I have fruited it two or three times before, but in small quantities, and generally under unfavorable circumstances. I find that trees received for Doyenné Boussock have proved to be of this variety. Not a *very near* approach to correctness in nomenclature.

Fruit, rather large, irregular obovate, nearly covered with dull brownish red, somewhat russeted, stalk short, stout, and curved. Calyx small, open, basin deep and regular, flesh a little coarse, very juicy, melting, and subacid. Very good. Last of November.

Beurré St. Nicolas (or Duchesse d'Orleans) promises to prove a fine fruit. I ripened but one specimen last season. It served, however, to remind me of former fine specimens. Fruit large, oblong-pyriform, greenish-yellow, stalk $1\frac{1}{2}$ inches long, stout, curved. Calyx closed, basin shallow and irregular. Flesh not very fine grained, juicy, melting, and subacid. Last of September. Very good.

Beurré Superfine is another fruit of fine promise. Having had but a specimen or two at a time, I cannot speak of its bearing qualities with certainty, but have the impression that it is a little shy.

Fruit large, pyriform, dull yellow, slightly russeted. Stalk $1\frac{1}{2}$ inches long, stout, curved. Calyx very small, basin narrow and rather deep. Flesh somewhat coarse, melting, and subacid. First of October. Very good.

Colmar Precoce fruited last year for the first time, and appears to be identical with the Jaminette.

Columbia does not fulfil its promises. A few years since the specimens

were large, fair, handsome, and good. Of late they are of moderate size, and crack badly—not like the cracking of the White Doyenné, but with long and large cracks penetrating nearly to the core, as I have seen Van Mons Leon le Clerc and other sorts affected.

Doyenné d'Été, as I before stated, bore a large crop, and the fruit was of better quality than I have usually found it. It grows finely, forming a vigorous upright tree, nearly as erect as a mountain ash. I have rarely been able to color it well, and have scarcely ever seen it so brilliant as it has been figured in colored plates.

Fruit small, roundish-turbinate, greenish yellow with a slight blush in the sun. Stalk long, slender, calyx small, erect, basin shallow. Flesh a little gritty, juicy, melting, and sweet. Very good. Middle of August.

Duchesse de Berri (d'Été) improves upon acquaintance. I at first did not think it any acquisition, but it has since proved to be quite good, although from its small size and later maturity than the last described sort, I do not consider it of much value. Fruit small, turbinate, yellow, with a little russet. Stalk short, rather stout. Calyx small, open, basin shallow and indistinct. Flesh coarse, melting, very juicy and sweet. Very good. Ripe about the tenth of September.

Fortunée fruited for the first time, and proved a larger fruit than I had supposed it to be, being about the size and shape of a large Belle Lucrative. It ripened in the latter part of December, I think, and was of good quality; but having neglected to make any memoranda respecting it, I am unable to describe it.

Oswego Beurré fruited profusely, and most of the specimens were of fine size, some of them very large; but notwithstanding its reputation of being a fine pear, *not one* was eatable. This has now fruited for several years, and I have never yet found a specimen which I could rank higher than "indifferent," a fact for which I am unable to account.

Fruit large, roundish, sometimes rather flattened, stalk short, stout, inserted in a deep cavity. Calyx rather large and open, basin deep and rather wide, skin bronze yellow, considerably russeted. Flesh coarse, wanting in juice, astringent, and scarcely edible. November.

St. André fruited well, and proved good—not so fine, however, or so large, as I had been led to expect. It being its first year of bearing, I hope for an improvement in both respects.

Suzette de Bavay, I verily think, is rather a humbug. It is very small, the best specimens being about as large as Duchesse de Berri, the smaller ones mere buttons. It keeps pretty well, and is of fair quality, having a very sweet, pleasant flavor; but for a winter pear its exceeding smallness renders it undesirable.

Swan's Orange is an annual disappointment to me. Its large handsome fruit leads one involuntarily to expect an interior of at least fair quality, corresponding in some degree with the prepossessing external appearance; but all the specimens that I have tasted have the invariable insipid acidity which I have become persuaded belongs to the variety. If it is anywhere else of "very good" quality, I should be gratified to know it.

Fruit quite large, obovate, tapering obtusely to the stalk, and somewhat irregular. Stalk generally short, stout, and obliquely inserted. Calyx pretty large, partially closed. Skin fine golden yellow, with russet streaks and patches. Flesh coarse, juicy, not very melting, and of a quite acid flavor. Indifferent. October.

Triomphe de Louvain is a pear which I have not before seen, and I do not remember to have heard it named. It bore a most abundant crop, and is externally a rather prepossessing fruit, having much of the appearance of the Fulton. Fruit medium, or rather large, roundish, considerably flattened. Stalk quite short and stout. Calyx large, open, with short erect segments. Skin dark brownish russet, paler in the shade. Flesh coarse, rather dry, and of a flat, indifferent flavor. October.

Rateau Gris., or Beurré de Louvain, is an enormously large fruit, somewhat resembling in form and size the Catillac, but with a dark green skin, covered with large rough dots, and much russeted. It keeps quite late, and cooks finely; but is quite as inedible as a turnip in a raw state, the flesh being hard, dry, and tough. It is fit for cooking all winter; but I have never succeeded in ripening one. It is somewhat addicted to cracking.

Triomphe de Jodoigne has fruited two or three times, but has invariably been blown from the tree before reaching full maturity.

Van Assche has proved, so far, quite small and not very enticing, either in appearance or flavor. The tree is not in a very vigorous state, however, and the fruit may improve with the health of the former.

Fruit medium size, sometimes quite small, roundish-turbinate, greenish yellow, dotted, and tinged with red. Stalk of moderate length, rather slender, inserted in a slight cavity. Calyx small, open, basin wide and shallow. Flesh coarse, a little gritty, tender, juicy and sweet. Good. October the first.

Vicompte de Spoelberch has not yet come up to its reputation. It has never proved better than "good," and rarely that, sometimes being quite inferior.

Fruit scarcely medium size, obtuse pyramidal, generally one sided, pale yellowish green. Stalk long, curved. Calyx small, closed, basin wide, rather shallow. Flesh juicy, not very melting, with a pleasant but rather insipid flavor. Indifferent. November.

THE MARKET GARDENERS OF LONDON.

"THE market gardeners of London," says a gardener of judgment, "are skillful, industrious men. Some time ago I was engaged for three or four months along side a market garden of twelve or fifteen acres in the neighborhood; things were exceedingly well done. In it there were small frames to the number of fifty or sixty lights, the greater part of which were full of young lettuces sown in November as thickly as mustard and cress. The lights of course were off in the day, and the young stuff looked green and beautiful. The greater part of the garden or land, which is light and workable at all times, had been turned up to the weather. About the 1st of March they put about half of the garden in long beds six feet wide, and about eighteen inches apart. These were sown with turnip radish seed, a bushel to the acre, and finished well. Two lads with pistols and rattles, and voices strong enough, were employed running up and down the garden to keep the birds off.

"The men next nicely smoothed the other half of the ground with rakes, for the reception of the lettuces, the London, or Brighton cos, which were planted a foot apart all ways. They were planted so beautifully and exactly that they seemed to be in straight rows from all points of view. The frames

were then put on half sunk new beds of warm dung, and into them were planted cucumber plants which thrived and bore well ; a money-making crop. The radishes were ready about the first week in May, if I remember aright, and sold for 40 $\frac{1}{2}$ an acre ; twelve or thirteen women were employed in bunching them. The lettuces were soon ready ; got a bit of bast about them a few hours before they were pulled, and sent to Covent Garden ; brought 10 $\frac{1}{2}$ an acre more than the radishes. Vegetable marrow succeeded the radishes, and French beans the lettuces, generally speaking. After these came a crop of cabbage, or what are called coleworts, for winter. There were small patches of other vegetables—here a bed of rhubarb, there a corner of cauliflower, and just against the gate a rood of ten-week stock, the double ones for cut flowers and the single ones for seed."

KINGSESSING PEAR.*

LEECH's Kingsestring is a synonyme of this fruit ; origin in the grounds of Isaac Leech, near Philadelphia. Fruit large ; obtuse-pyriform, or truncate conic ; skin greenish yellow, thickly sprinkled with minute green or gray dots ; stalk medium or long, curved, and fleshy at its insertion in a broad, uneven cavity ; calyx closed, set in a shallow, irregular basin ; flesh whitish, somewhat coarse and granular, juicy, buttery and melting, with a sweet, rich, perfumed flavor ; ripe in September.—*Charles Downing.*

DOWNER'S PROLIFIC SEEDLING STRAWBERRY.

At the request of J. S. Downer, proprietor of Forest Nursery, near Elkton, Ky., we, the undersigned, met at his house on the 29th day of May, 1858, to examine a seedling strawberry raised by him, and now bearing its third crop of fruit, and after a careful examination of the plants and fruit, and a comparison with a number of the most popular varieties of this fruit under the same state of cultivation, such for instance as McAvoy's Superior, Hovey's Seedling, Hooker's Seedling, Burr's New Pine, Myatt's Deptford Pine, Longworth's Prolific, etc., we submit the following report and description :

Vines remarkably large and vigorous, of a pale green color, resembling Peabody's New Hautbois ; fruit-stalks long and erect, fruit of the largest size, roundish oval, of a bright scarlet color. Flesh moderately firm, rich, juicy, highly flavored and excellent. Ripens early, and continues in bearing for a long time. Flowers hermaphrodite.

We regard the introduction of this strawberry, which we propose to call Downer's Prolific Seedling, as a triumph. Its productiveness surpasses any thing that we had ever conceived of in this fruit. We counted upwards of fifty very large, ripe berries upon a single plant, with a great number of unripe ones, in the various stages of development, from the bloom to the perfect berry, and this, perhaps, was not more than an average of the entire bed.

Some of us have had considerable experience in strawberry culture, and

* See Frontispiece.

we are unanimously of the opinion that, taking all the qualities of this strawberry into consideration, it is, for this latitude, worth more than every other variety of this fruit with which we are acquainted.

L. B. HICKMAN, M.D.
H. W. DARNALL, M.D.
E. S. STEWART, M.D.
A. WEBBER, M.D.
B. E. RANDOLPH.
S. C. MERCER.

Elkton, Todd Co., Ky.

STATE OF KENTUCKY,
Todd County, S. Ct.

I, Ben. T. Perkins, Clerk of the Todd County Court, for the County and State aforesaid, do hereby certify: That I have this day examined the original certificate, of which this is a true copy; and I do further certify, that I am well acquainted with the aforesaid Committee, and I unhesitatingly say they are among the best citizens of our section of country; they are gentlemen noted for their scientific and legal attainments.

(Seal.)

In testimony whereof I have hereto set my name,
and affixed the seal of said County Court,
this the 23d day of June, 1858.

BEN. T. PERKINS,
Clerk Todd Co. Court.

CAN PEARS BE PROFITABLY GROWN FOR MARKET?

BY F. R. ELLIOTT, FORMERLY OF CLEVELAND, NOW OF ST. LOUIS, MISSOURI.

UNDER this head Mr. L. F. Allen has recently detailed his experience in the planting and growing of pears. As Mr. Allen says, "one swallow does not make a summer, neither should one man's experience condemn or substantiate the policy and profit of pear growing." It is now about sixteen years since I commenced planting pear trees to produce fruit, and without any of the enthusiasm with which Mr. Allen says he was imbued. I argued against planting the pear except when grown upon *seedling* pear stocks. To the use of Suckers, or Apple-mountain Ash, Quince, or Thorn stocks, as likely to produce a long-lived healthy tree with the ordinary American orchardist's cultivation, I was opposed; and as a nurseryman at the time, I reduced my receipts very materially by such opposition. I argued that the orchardist should select such varieties as grow moderately vigorous upon the pear stock, and on that stock which came early into bearing. Of such I planted, not by hundreds or thousands, but by dozens. I obtained fruit in three years from planting; and those trees, less ten per cent, are now in existence and bearing annually moderate crops. The soil was gravelly sand underlaid with more or less of bog iron ore.

In 1848-9, about the time of Mr. Allen's enthusiastic commencement, and when all the Horticultural and Agricultural Journals teemed with Dwarf Pears and the profits of growing them, I commenced an entirely new plan—

soil, mostly a stiff clay loam ; subsoil, stiff yellow clay, by many considered a most unpromising soil for any purposes of fruit growing. At that time the sort of stock for dwarfing was a question open to as many different views as is the subject now under consideration ; and being then in the nursery business, I budded Pears on White Thorn, Mountain Ash, Common Seedling, Quince, and Angers Quince. Of such propagating, I sold to suit the wants of my customers, and planted out pretty extensively of trees one year old from the bud upon each and all of these stocks. As a matter of experiment also, and to help decide the question as to what varieties would do well as dwarfs, I planted from three to five trees of a sort of something over two hundred sorts. My soil was simply subsoil ploughed, (it should have been under-drained,) and my trees mostly planted so that the stock, whatever it was, was all underground. The results have been as follows : All lived ; many grew the first season. The second season, many sorts without regard to stock died. Some twenty or more kinds grew finely. The third season, all on Mountain Ash. Thorn and Seedling Quince departed this life ; and many of the sorts on Angers also ; others stood still. The fourth season, and on to this year, most of them have fruited abundantly. Many of the kinds, however, became stationary in their growth, while others continued healthy and vigorous. At this time, therefore, I can say that out of my planting nine or ten years since, there are only about one hundred or one hundred and ten kinds. Of these, perhaps twenty sorts may be said to have grown healthily ; and sufficiently vigorous, while of the remainder, many have not increased in size for the past four years ; others have grown beautifully less.

About the same time, or perhaps one year later, I planted out something over two hundred Standard Pears ; these, however, of only a few sorts. The result has been that my Standards have produced for three years a quantity full as great as I have considered desirable, and the trees continue healthy and vigorous.

Cultivation. My Dwarf Pears have been annually manured in the fall ; and the manure lightly forked or spaded under. In the spring they have been hoed ; and during summer some have been mulched with new-mown grass ; others have been regularly hoed around, say once a month. Pruning has been done whenever I found it convenient. I prefer August or October, but practice to suit my convenience. Many of my sorts, when I had three or five of a kind, I have left one tree without any pruning. Such course I cannot advise, as the tree runs up too high, compared with its breadth ; and while it does not break off, its leverage is such as often to loosen the ground and break many of the small roots of the quince stock.

I have in this time lost two trees by insect blight, and four or five trees by blight of cimistration.

Like Mr. Allen, I consider this story "a very useless one," but in order to help make up the "summer," I have concluded to give your readers my experience.



RHUBARB—WHICH IS THE BEST?

BY C. W. GRANT, NEWBURGH, N. Y.

To the child of twenty years since, the word Rhubarb was suggestive of anything rather than the most delicious pastry. And when late in the season, wanting the brisk-flavored, aromatic Spitzenberg or Newtown Pippin for a refreshing dietetic pie, which a dinner of roast beef always calls for—and these could not be had—the small, tough, stringy, footstalks of the old Turkey Rhubarb came to be used as a bad substitute. But the “change of the name” to “pie plant” did not work a “change in the thing,” nor could the skill of the pastry cook so far obscure the flavor and odor peculiar to the root of that variety, with which the stalks are always in some degree flavored, that the idea of the apothecary’s shop was not always too sensibly present at its use.

John Bull, perceiving the rudiments of great excellence in this candidate for the cuisine, and stimulated by his wants, resolved to attempt by cultivation and improvement to obliterate the forbidding feature of its character. Of the steps taken in the progress of amelioration, and the names of varieties produced, no mention need at present be made, until we come to the “Victoria,” which was originated by Mr. Myatt, of Deptford. This fully realized the highest hopes entertained of its improvement; having no vestige of offensive odor, of gigantic size, and very productive. It was largely imported, and very highly valued; still it was covered with a thick skin which was some trouble to remove, and was rather troublesomely acid, besides coming much later than some of the smaller varieties.

The next great improvement was in a variety originated by Mr. Charles Downing, at Newburg. It was named Downing’s Colossal; and in addition to its great size, and much less degree of acidity, it had a fine, rich, aromatic flavor, in which it greatly surpassed all predecessors. This, too, has been surpassed by Mr. Myatt, in the “Linneas,” whose excellence in every important characteristic has placed it for the last four or five years in rank far before any other variety—Mr. Downing himself, greatly preferring it to the Colossal, which is its nearest competitor, and to which it has a strong resemblance. Besides being the earliest of all, and most productive, as well as finest flavored, and least acid, it has a skin so thin that removing it is quite unnecessary, and its pulp when stewed has the uniform consistence of baked Rhode Island Greening, and it continues equally crisp and tender throughout summer and early autumn.

Although the cultivation of Rhubarb for market is quite simple, it has some wants that must be complied with to secure a profitable crop. It delights in a rather retentive soil, but is so much earlier in a dry, light, or porous soil, that opinions would differ as to the most advantageous. The ground must be well manured, and if well worked with a plough, to the depth of eighteen inches, a very remunerative crop may be obtained, ranging at from two hundred to four hundred dollars per acre, in the latitude of New York. As earliness is important, a locality more southern would be advantageous.

To obtain the best results, more care and expense than just indicated are required. If the ground is deeply worked, (to the depth of three feet,) and well enriched, the quantity produced per acre is almost incredible—but at least three times as much as can be obtained by ploughing alone—with the

further advantages of some days in earliness, as well as superiority of quality, in favor of trenched ground.

A plan which I adopted a few years since, may perhaps be advantageous under similar circumstances. I trenched a field of nearly an acre for Pears. In such cases the ground needs cultivation, and should be occupied, until the trees require it all, by some crop that does not injure the trees, or exhaust the ground for their future use. I found the Rhubarb a very pleasant and profitable occupant of the spare room, and not sensibly injurious to the Pears. The cultivation may be done by the horse cultivator in early spring, but soon the leaves of the Rhubarb will so cover the ground that a little pulling of weeds will be all that can be required.

For a few years past, supply and demand have both been rapidly increasing, and with about equal pace. The best methods of preparing it for the table, either for pies or sauce for meat, or as a stewed fruit for the tea table, like the Tomato, requires some skill and judgment on the part of the housewife, for if its acidity is entirely overcome by simple refined sugar, it becomes too rich or concentrated for free and abundant use, which when well understood will be no more restricted throughout the entire year than that of the Tomato; and when its preparation and use are as well understood, it will not be esteemed second to that *Fruit* in usefulness, nor be absent many days in the year from the table where it is *known*. I do not hazard much in putting forth the opinion, that as a tonic, dietetic aperient, it has no equal. On the great western prairie, and wherever acid fruits are not abundant, it will be invaluable.

The chief feature in the produce around London, tending towards market, is carts in inconceivable numbers, loaded with Rhubarb, even there during the short season of the Gooseberry, eclipsing that of its competitor, which there in its perfection has an excellence to us unknown.

AMERICAN POMOLOGICAL SOCIETY.

THE Seventh Session of this National Institution will commence at Mozart Hall, 663 Broadway, in the City of New York, on Tuesday, the 14th day of September next, at 10 o'clock, A.M., and will be continued for several successive days.

Among the objects of this meeting are the following: To bring together the most distinguished Pomologists of our land, and, by a free interchange of experience, to collect and diffuse such researches and discoveries as have been recently made in the science of Pomology—to hear Reports of the various State Committees and other district associations—to revise and enlarge the Society's catalogue of Fruits—to assist in determining the synonyms by which the same fruit is known in America or Europe—to ascertain the relative value of varieties in different parts of our country—what are suitable for particular localities—what new sorts give promise of being worthy of dissemination—what are adapted to general cultivation; and, especially, to concert measures for the further advancement of the art and science of Pomology.

The remarkable and gratifying progress which has recently been made in this branch of rural industry, is in no small degree attributable to the establishment and salutary influences of our Horticultural and Pomological Societies, the proceedings of which have been widely promulgated by the

Press. A great work has been already performed, but a greater still remains to be accomplished. It is, therefore, desirable that every State and Territory of the Union and the Provinces of British America should be ably and fully represented in this Convention, and the Pomological, Horticultural, and Agricultural Societies, within these limits, are hereby requested to send such number of delegates as they may deem expedient. Nurserymen, Fruit growers, and all others especially interested in Pomology, are also invited to be present, and to participate in the deliberations of the meeting.

Held as this Assembly will be, in the great commercial emporium of our country, easily accessible from all parts of this continent, and at the same time when the Convention of the Editors of the Agricultural Press will be in session, it is anticipated that the attendance will be larger than on any former occasion, and the beneficial results proportionably increased.

In order to increase as much as possible the utility of the occasion, and to facilitate business, members and delegates are requested to forward specimens of fruits grown in their respective districts, and esteemed worthy of notice; also, papers descriptive of their mode of cultivation—of diseases and insects injurious to vegetation—of remedies for the same, and to communicate whatever may aid in promoting the objects of the meeting. Each contributor is requested to make out a complete list of his specimens, and present the same with his fruits, that a report of all the varieties entered may be submitted to the meeting as soon as practicable after its organization.

For the purpose of eliciting the most reliable information, the several Fruit Committees of States, and other local associations, are requested to forward to Hon. Samuel Walker, General Chairman of the Fruit Committee, Roxbury, Mass., or to P. Barry, Esq., Secretary of the Society, Rochester, N. Y., a definite answer to each of the following questions, at an early date, and prior to September 1st:

What *six*, *twelve* and *twenty* varieties of the APPLE are best adapted to a family orchard of *one hundred* trees, and how many of each sort should it contain? What varieties, and how many of each, are best for an orchard of *one thousand* trees, designed to bear fruit for the market?

What *six* and *twelve* varieties of the PEAR are best for family use on the Pear stock? What varieties on the Quince stock? What varieties, and how many of each of these, are best adapted to a Pear orchard of *one hundred* or of *one thousand* trees?

What are the *six* and *twelve* best varieties of the PEACH for a family orchard? What are the best varieties, and how many of each, are best adapted to a Peach orchard of *one hundred* or of *one thousand* trees?

Answers to these questions should be made from reliable experience, and with reference to the proximity or remoteness of the market.

Societies will please transmit to the Secretary at an early day a list of the Delegates they have appointed.

Gentlemen desirous of becoming members can remit the admission fee to Thomas P. James, Esq., Treasurer, Philadelphia, who will furnish them with the Transactions of the Society. Life Membership, twenty dollars; Biennial, two dollars.

Packages of Fruits may be addressed to WM. S. CARPENTER, Esq., 468 Pearl street, N. Y.

MARSHALL P. WILDER, President, *Boston, Mass.*

P. BARRY, Esq., Secretary, *Rochester, N. Y., July 1, 1858.*

EDITORS TABLE.

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the *HORTICULTURIST*, *Germantown, (Philadelphia,) Pa.* Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

CANADA AND THE CANADIANS.—We have as Horticulturists remarkably little knowledge of the doings of our near neighbors, the Canadians. Prompted by a strong desire to ascertain what they were accomplishing, we have paid them a visit recently, and shall have something to tell in our next of their great proficiency in the culture of fruits and flowers, in doors and out, a proficiency far beyond our anticipations.

EXCUSES.—During an absence from home, our table has become loaded with communications, letters of valued correspondents, &c., &c., all of which shall secure attention as soon as possible. The extent of the duty must be our apology to those who do not immediately hear from us.

FRUIT GROWER'S SOCIETY OF WESTERN NEW YORK.—The meeting held at Rochester, on the 30th of June, was an interesting one. Strawberry cultivation was freely discussed, and a vote taken, which resulted in the following:

FOR AMATEURS.

Hooker,.....	12
Burr's New Pine,.....	7
Early Scarlet,.....	7
Hovey's Seedling,.....	4
Wilson's Albany,.....	4
Genesee,.....	5
Jenny Lind,.....	2
McAvoy's Superior,.....	2
Triomphe de Gand,.....	2
Peabody's Seedling,.....	2
Trollope's Victoria,.....	2
Walker,.....	1
Crimson Cone,.....	1
Cushing,.....	1
Chilian,.....	1
Richardson's Cambridge,.....	1
Longworth's Prolific,.....	1

FOR MARKET.

Early Scarlet,.....	8
Crimson Cone,.....	7
Wilson's Albany,.....	7
Genesee,.....	5
Hooker,.....	4
Hovey,.....	4
Cushing,.....	2
Scott's Seedling,.....	2
Iowa,.....	2
Longworth's Prolific,.....	2
Burr's New Pine,.....	2
Walker,.....	1
Fremont,.....	1
Peabody,.....	1
Triomphe de Gand,.....	1
Chilian,.....	1

The conclusion regarding the curculio seems to have been that, shaking the enemy off is the best course. He has attacked the pear and cherry. A light dressing of salt and ashes was recommended round the trees in early spring.

Pinching the pear was recommended, and a discussion had on pruning the grape, in which the established systems were more or less recommended. The cherry was stated to have become

diseased and sickly in Western New York, and the diseased state of the peach trees and the curled leaf was lamented. Mr. Barry thought there was no cause for discouragement, and that the old and diseased trees should be replaced with those young and vigorous. The finest climates in the world, he remarked, even Florida and Italy, have periodical changes and extremities which destroy staple crops.

Fruit growing has its troubles as well as every other business, but persevering men like the members of this society will conquer them if anybody can.

TERRA COTTA ORNAMENTS.—A most estimable lady has called our attention to an able artist in Terra Cotta, and we are anxious to make him better known to our readers. Mr. Terry, No. 1194 Broadway, New York, is an Italian, educated for and with peculiar qualifications for modelling either original articles required or copying the best specimens, and he is extremely desirous to introduce his manufacture, which is perfectly adapted to stand our climate. He produces Statues, Fountains, Vases, and in short everything that can be demanded in his line for ornament, and we will add that unless he receives immediately some patronage he will be obliged to leave America. He has fixed his establishment so far up Broadway that he has been little noticed, but we are sure those who visit him will be gratified with the progress the art is now making among us. His flower pots are so ornamental as alone to be worthy of a visit. *See his advertisement.*

THE "EXAMPLE AND A BIT OF ADVICE" in our June number has been well received by the gentleman who prompted it. His reply is of sufficient interest to allow of an extract or two for general benefit. He says: "The rage for speculation, too long rife in our favored land, has hitherto stifled, in a great measure, the love of rural pursuits. But as the nursing of trees, fruits, and flowers is found upon examination to be more captivating than the race for the 'Dollar,' the indications around us are unmistakable of a growing fondness for this communion with nature. Perhaps, therefore, not the least beneficial result of the late financial storm, is the impetus it has given in the American bosom to that taste for rural enjoyment which for centuries has been a 'ruling passion of the mother country.'"

"Specially was I pleased with the advice to drive the cart of berries to the depot one's self, 'should Jacob be sick,' as this conforms to my own notions of the *true dignity*, and *independence* of country life. With me a very important advantage of a residence in the country is this very independence, the let-your-neighbor-alone-spirit which prevails there. True comfort in the country is embraced in that comprehensive, blessed word, *freedom*. Freedom from the artificial restraints and conventionalities of city life; freedom from the pomps and affectations, the flummery and fudge which such a life too often engenders; freedom to behold in the gorgeous sky in the fullness of splendor of the rising and setting sun; freedom to drink in the beauties which God has lavished over hill and plain; freedom to *breathe* and to *think*, to *talk* and *act* in deference only to the manifest laws of decency and right, and in the dignity of manhood, without measuring one's breath, moulding one's thoughts, twisting one's tongue, and shaping one's actions in servile obedience to the capricious mandates of silly fashion."

Our valued correspondent has the right views; their publication is due to their excellent appreciation of the true objects to be combined in a country residence. We all know how much

"Our sleeping visions, waking dreams,
Receive their shape and hue from what
Surrounds our life."

An agreeable writer says: where the counsels of wisdom preside over parental love, where those whom God has united remain in unity under the bonds of a beautiful affection, than which

"All other pleasures are not worth the pains;"

where woman appears in her true gentleness, and the children grow up in the love of parents and the fear of God, *there* is a home of taste, a home of virtue, of mental discipline, a home of moral worth, and domestic affection, and religious aspiration. Round it all the Muses sing; the

simplest things acquire grace and meaning; vulgarity, meanness, and vice dare not cross the threshold—ennui cannot find its way there, petulance is smiled out of countenance, and temper is rebuked by little ruddy faces and curly heads of hair, and eyes that sparkle with enjoyment. . . . Who then would not have a home of Taste? If you have it already, dear reader, prize it, and continually strive to make it more and more perfect.

A GARDEN BOX OR TUB.—The ever recurring round cedar tub for lemon trees, myrtles, &c., &c., may be varied very beautifully in a simple manner. The makers of paper hangings employ square carved blocks with the pattern of the paper well developed, some with flowers, running vines, and designs appropriate to the purpose. By taking four of these, of different patterns if you please, nailing them together, and putting a rim at top, and a bottom, you have a good and most substantial box. Next paint and sand it, and when completed, with its tree growing, it represents a stone carved vase, and but for the shape might serve for a "Maltese." The blocks are thick, and consequently heavy, but such boxes answer also very well to stand a potted plant in. Altogether it is quite an adaptation of a worn out article to a useful and ornamental purpose. The old blocks, and those "out of fashion" are generally burned. Thus, with the use of spent hops for mulching, and these old blocks, two worthless articles may be introduced to practical value.

THE WANDERING JEW.—A little runner with an ivy leaf and neat flower, which is perfectly hardy in our latitude and still further north, the *Linaria cymbalaria*, sometimes called the Wandering Jew, is a great favorite. In a wall it becomes a perpetual object of beauty; it will grow between stones, or bricks, about a cellar window, and at the foot of the wall it makes partially successful attempts at climbing. We commend it to the attention of amateurs.

CHRYSANTHEMUMS.—The Chrysanthemum is becoming extremely popular, new interest having been created by the increase of varieties, and by the knowledge of the best modes of culture and training. The best are placed in ten-inch pots, and trained so as to hide the latter with foliage and flowers, presenting more the appearance of well grown Chinese Azaleas than of Chrysanthemums under ordinary management. This is effected by judicious training, which is commenced about the middle of August after they have received their final shift, and continued as may be requisite until they have fairly set their bloom. Under this treatment the plants are literally masses of flowers, none of the buds having been thinned out. Thus a good succession is obtained and the plants have a more natural appearance, and last longer in beauty than if they had been disbudded, as is sometimes done in the case of plants for exhibition when one bloom only is allowed to a shoot.

THE ILLUSTRATED BOUQUET, LONDON.—There are now three quarterly numbers of this illustrated work issued—June, September, and February, with five large "Bouquets" in each. The Bouquet of Gloxinias has ten kinds in it. That of new Fuchsias, last February, has four most splendid flowers, two light and two dark kinds; *Rose of Castile* and *Guiding*, being the two whites; and *Prince Frederick William of Prussia* and *Loch Katrine*, the two dark ones; *Begonia Rex* occupies one page itself, as also does a magnificent figure of *Eucharis amazonica*; another Bouquet is filled up with two new large double Petunias, which were shown last summer at the Regent's Park, by Mr. Grieves, of Culford Hall, one of which is compared with that of a double Hollyhock, the other with a Camellia-flowered Balsam, together with a new hybrid Begonia, between *Fuchsoides* and *Ingrami*, "a fine addition to the shrubby-habited Begonias which are in the hands of Messrs. Bainbridge and Hewison, Nurserymen, York." The new *Gesnera cinnabarina* makes a "Bouquet" of itself, and a most brilliant nosegay it is. *Gesnera densiflora*, another new one, introduced by Linden, in the way of *elongata* and *Monochatum ensiferum*, make up another gorgeous picture of a nosegay of rose, orange, crimson, scarlet, and yellow, with two shades of green leaves on the white ground of the page; altogether a drawing-room drawing, and the written account is plain common sense,

and business-like, while the information about culture, propagation, and the proper kinds to grow, read exactly as if it were printed from a large memorandum book full of dog's ears—but looking fresh from the potting bench, or from a shelf in the propagating house—all simple, sound, and single-handed, that is to say, nothing is taken for granted, but everything is tried and proved in the establishment before it is recommended. None but the best kinds of the most popular plants are figured in these "Illustrated Bouquets," and the best selections of each family are given under each Bouquet. The work may be procured of G. M. Thorburn, Newark, New Jersey.

ACHIMENES AND GLOXINIAS.—Mr. Beaton describes his method of treating these favorites, thus:

We manage a select collection of Achimenes, and a very choice assortment of hybrid Gloxinias, without forcing, and the way we do them may be confidently relied on.

We have them in bloom in the conservatory from the end of June to the latter part of September; but they would do in the smallest greenhouse just as well, and also in living-rooms, where Geraniums are flowered. When the bloom is nearly over, we keep the pots rather dry; and as the flowers and foliage begin to look seedy, we move them out of sight to the top shelf along the back wall, close up to the light, and under the constant draught of air, in and out, night and day, till after the middle of November; by that time the soil is as dry as Scotch snuff, and the "roots" are as thoroughly ripe as if the pots were in an Orchid house.

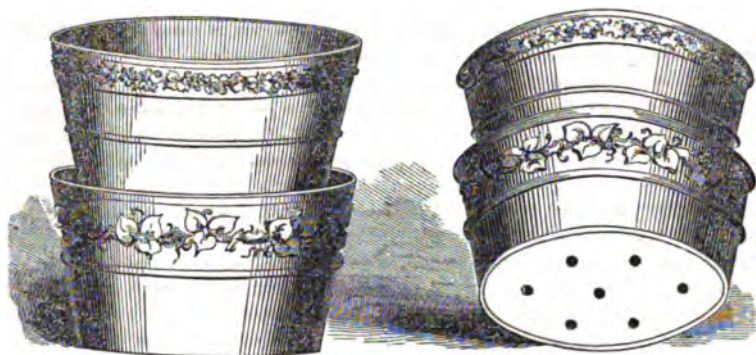
After the roots, or tubers, are thus ripened, we have proved most conclusively that they will keep all through the winter as safely and as long as late Potatoes, if they are kept quite dry, and free from frost, and from the influence of the air. The whole secret for resting Gloxinias and Achimenes for a very long period, or from the fogs of November to the April showers, is to keep them carefully excluded from the air. The simplest way to do that is to shake all the soil from them, and to put each kind into a separate bag of coarse paper, with its name, or tally, or number stick, along with it; the name might also be written on the outside of each bag. The mouth of each bag is tied as close as a bladder, and all the bags are put loosely into a basket, and the basket is put by in a warm closet in-doors. I have grown thousands of seedling Gloxinias before there was a hybrid in the family, and had my share of them ever since; but I confidently assert, that I never had a finer or more plump looking set of bulbs than I saw last week, when one set of the Gloxinias were unbagged.

IMPROVEMENTS IN FLOWER POTS.—For all the common purposes of plant cultivation, the Flower Pots in general use are all that can be desired; but there are many tribes and plants which do not thrive in our hands without difficulty; and others, again, which we desire to grow to greater perfection than usual, in which the structure of the pot is no mean question. The culture of the Heath, the Epacris, and other hard wooded plants, has so far not only baffled the majority of our cultivators, but also baffled them in this, that they can give no satisfactory explanation of the failure. They are supposed not to be able to endure the heats of our summers, yet the temperature of their places of natural growth often exceeds our own. Mr. Buist, in his valuable Catalogue of Select Greenhouse plants, just issued, says of the "Erica," "they delight in a very sandy, dark soil, and in an elevated northern climate, and to be protected from hot suns, and heavy rains." Such being our friend's experience, it is more than probable that the constant dryings and waterings which our hot suns entail on these delicate rooted plants, is one great cause of their failure; and equally probable that a peculiar form of flower pot would supply the defect. Some years since, the English growers invented a pot with hollow sides, by which it could be filled with water when occasion required; but as we have heard nothing of it for some time past, it has probably been found in some respects objectionable. Our friend Colonel D. S. Dewey, of Hartford, in a private letter, makes a suggestion which we think might be turned to good account in this connection. He says:

DEAR SIR,—Judging from certain items in your monthly "Gossip," and also from sundry

illustrations in the *Horticulturist*, *passim*—I have decided that ideas combining novelty and utility are always pleasing and interesting to you. For this reason, I took the liberty of introducing to your notice, in December last, a description of my invention for postmarking letters, &c.; and now I propose to call your attention to another "crotchet" of mine, having reference to what I think may be an improvement in Flower Pots.

I propose to substitute any reasonable number of smaller holes, in place of the one hole in the bottom of each flower pot as now made. One object of this is, to insure more uniform drainage and aeration; and another is, to incline the rootlets or plants to a more natural and spreading growth.



I propose that flower pots for certain classes of plants should be made with a flange, of the same material, projecting a little from the outside edge of the bottom of the pot all around, and then turned up, say to half the height of the pot, and say an inch distant from it all the way; thus leaving the pot free, as to drainage, and port holes for roots, (through which to shoot,) but with a small reservoir of water in the deep saucer, the object of which is to supply the lower half, (more or less,) of the soil, &c., inside of the pot with moisture from the external surrounding of water; and, also, incidentally, to check evaporation, (which, by the way, is often of much more consequence than may be supposed by many.) In place of water in this lip, or saucer, wet moss, or some similar substance, may be placed for this last-mentioned purpose.

As a further illustration, place a flower pot six inches high, and with an average diameter of four inches, inside of another flower pot three inches high, and average diameter of six inches, and cement the bottoms closely together, making the drainage holes to correspond exactly.

Yours truly,

D. S. DEWEY.

APIOS TUBEROSA.—This tuber is again discussed as a substitute for the potato. It was called *Glycine Apios* by Linnæus; *Apios tuberosa* by modern botanists, and *Saa-gaa-ban*, by some of the North American Indians, is a small trailing, tuberous perennial, with pinnated leaves, narrow lanceolate leaflets, and small brownish purple flowers, rather sweet-scented, and growing in axillary racemes, which are shorter than the leaves.

It is described by North American botanists, as growing in damp, rich soils, along the margins of swamps in Carolina (Elliott, "Fl. Carol." ii. 232), and in moist shady places from Canada to Florida, west to Missouri (Torrey and Gray, "Flora of North America," i. 282): but Pursh asserts that it inhabits *hedgcs* and mountain meadows from Pennsylvania to Carolina ("Fl. Amer. Sept." ii. 473). Its roots, that is to say, its tubers, are described by Elliott as *small*, and as having formed an article of food to the aborigines; Nuttall calls them "oblong cylindrical tubers, edible and farinaceous, much like those of *Lathyrus tuberosus*, sold in some of the German markets, and rarely larger, though very numerous" ("Genera of North American Plants,"

il. 113); Pursh is the only author that we can find who speaks of them differently; he says, that the roots "sometimes grow to an enormous size."

The plant itself is no stranger to our gardens. It is figured in the "Botanical Magazine, t. 1198, and in other works. A rude woodcut, indeed, is to be found as early as 1640 in Parkinson's "Theatrum," fol. 1062, at which time the plant was cultivated in England under the name of "*Terre glandes Americanae sive Virginianae*—Virginia Earthnuts." The latter appellation seems to indicate in what estimation the plant was then held; it was regarded as a mere curiosity, with a "tuberous browne roote, which multiplies itself into sundry others."

When examined microscopically, the tubers are found to consist principally of a mass of large oval, very thick-sided cells, filled with starch, among which are scattered irregularly in the centre several woody bundles, composed of strangulated porous vessels of considerable size, very irregular and unequal laticiferous vessels, also much strangulated, and a few spiral vessels. Near the circumference, just within the bark, these bundles are arranged in distant narrow plates, forming short rays, and offering indistinct traces of concentric zones. A considerable quantity of truncated prismatical raphides is found among the cellular tissue; and around the central bundles of woody tissue are series of prosenchymatous cells, which seem chiefly to contain gum.

In a raw state, the tubers taste like Earthnuts, or perhaps between an Earthnut and an Acorn. When boiled, they are firm, sweetish, of a dirty yellow color, and in texture and flavor, may be compared to a mixture of sweet Chestnuts and Paraniip.

It may be readily cultivated, but it is not a large tuber till the second year; some think it not entirely wholesome. Have any of our correspondents tried it?

HOW TO RAISE SEEDLING PEARS.—Planting Pear pips for the purpose of raising new varieties, is a very interesting employment. Some 8-inch pots should be kept at hand filled to within an inch of their rims with tolerably fine mould, and when a fine Pear is eaten or one decays the pips should immediately be planted in the pots about half an inch deep. A piece of perforated zinc or woven wire should then be placed over the pot, to keep out the mice and birds, and allow the rain to enter. The pots may remain out of doors all the winter. In March or April the young plants will make their appearance, the wire covers may then be removed, and as soon as the young plants have made six leaves they may either be potted into single pots and planted out in a rich border in May, or at once transplanted from the seed pot to the border. They will, if the soil be rich, each make a shoot from 1 to 2 feet in length the following season; this will make a graft or grafts, which should be grafted on strong stocks on the branches of bearing trees, and in a few years fruit may be expected.

The raising of Pears from seed may be made much more interesting if the sorts from which they are raised be known; for this purpose only one kind should be sown in a pot and its name placed with it. In a very few years they show their origin in their leaves and shoots, and seem to go in races. I have at this moment a number of seedlings raised from *Ne plus Meuris*, they nearly all look alike, some of them have born fruit exactly like their parent; one or two, however, much larger, but unfortunately they ripened in October, and were not remarkably good. I have also a batch of seedlings from *Beurré d'Aremberg*, these with one or two exceptions, are apparently of the same race; one of them bore some fine fruit the past season, exactly like the *Beurré d'Aremberg*, but they ripened on the tree the first week in September, and were of the most delicious flavor, so that if an early Pear of the same flavor were wanted it would be an acquisition. Seedlings from *Passe Colmar* and *Glout Morceau* retain their family likeness in their habits very remarkably, and this will account for many of the new Pears being so much like our older varieties; there are some eight or ten new Pears of the *Passe Colmar* race, among our new sorts ripening at different periods, and nearly as many of the *Glout Morceau* tribe, among which *Beurré Bachelier* seems hardier than its parent; *Victoria* later, and so on.

To me, a lover of Pears, it is most interesting to watch the development of character in seedlings, and I beg earnestly to recommend the raising of them, in the manner I have directed, to those of your readers who have leisure—a garden, and are gardening lovers. Disappointment must be expected, for a fine looking seedling Pear will often prove anything but fine in flavor. When young trees give their first fruit the best method is to ask your friends to the first tasting, and then if they prove very bad indeed it gives occasion for a hearty laugh. I once had a seedling raised from Haddon's Incomparable, which was as large as a Catillac Pear, or say a moderate-sized garden Turnip, and of a bright orange color. I watched it with intense interest, and when it ripened invited my neighbors to the tasting: in doing so I think we all burst into a roar, for it was a horrid compound, in which acid and bitter and sweet struggled hard for the ascendancy. I have had other laughable adventures with seedling Pears, but hope in gardening matters never flags.—*T. Rivers.*

FUMIGATION MADE EASY.—First, as to the fumigating material. Buy some good *leaf* tobacco. Mind, leaf, *not* roll. Next, make "touch" of it. Every boy, whether he be a growing boy of fifteen, or a grown boy of thirty, knows how to make "touch." But as your lady readers may not be so wise, I will, for their sake, add, that the way to make "touch" is to take some nitre and dissolve it in warm water. About a table-spoonful of crushed nitre to a pint of water. Steep brown paper in this solution, dry it, and you have TOUCH. Now, instead of brown paper steep the tobacco leaves in the solution, and then dry them. You have then "touch tobacco," which will burn rapidly, without fumigating bellows or any other implement of the kind.

The plan I follow is this: I have an old flower-pot with a hole pierced through the side on a level with the floor. Then, inside, I have a piece of perforated zinc, to prevent the tobacco from falling to the bottom, and thus choking the draught of air through the hole. I place a couple of lighted matches on the perforated zinc, throw in the touch tobacco, rush out of the house, shut the door, and keep it so till morning.

I have often tried, and succeeded, by laying the matches on the floor, and heaping the touch tobacco over them; but of all the plans I tried, the old pot is the best. I have just done it now, and I suppose that the time which elapsed, from my going into the house and leaving my fumigator in full operation, was not two minutes.

Some friends, to whom I have communicated it, have found it most useful as well as easy. The nitre evidently adds to the effects of the tobacco.—*Simplex.*

ON PLANTING DWARF PEAR TREES.—When it was first recommended to plant them so deep that the point of junction of the graft, or bud and stock, should be beneath the surface of the ground, I conceived the plan to be a good one, and did not hesitate to put it in practice myself, or to advise my friends and customers to do so; after a trial of some five years I regret to be compelled to say my experience falls far behind my anticipations of the benefit I expected to witness.

Without any equivocation or mental reservation I now denounce and henceforth abandon the practice; and it is for the benefit of those whom I may by my advice have led astray, as well as others who may not have had any experience in the line of planting, that I now give and record the result of my own.

One half or more of all the trees I have thus planted, in from one to three years, have rotted off at the point where the bud was inserted; this is particularly the case with all those that are slow growers on the quince stock.

Nor is this all; I have killed a few which had been planted in the ordinary manner, by heaping the earth up around the trunk, and all by rotting as above mentioned.

There are a few varieties which have succeeded and grow very well, but they are the hardy vigorous varieties, such as Louise Bonne de Jersey, Rostiezer, Duchess D'Angouleme, &c., which you know will grow almost any way.

Those that have thus far lived do not appear to grow any more vigorously than do those which were planted at the depth they grew in the nursery, and if there is any difference it is in favor of the latter.

All that I can say in favor of the practice, is, that it hides the ugly appearance in those cases when the tree outgrows the stock; a very small matter, when brought alongside of the loss of a large portion of the trees planted, as my experience testifies.

I hope others may have had better success than your humble servant; were it necessary I could give you the similar experience of some others, but prefer to hear from those having had longer and more extensive trials, in other sections of country.—*J. Van Buren, Clarksville, Ga.*

RHODE ISLAND HORTICULTURAL SOCIETY.—Our report of the June exhibition of this Society, gives us reason to believe it is one of the best they have ever held. The Roses were especially fine and numerous. Mr. H. S. Mansfield contributed fine peaches from an orchard house, Zante currants, and Guava jelly made from fruit raised by himself, quite superior to the imported. Figs, strawberries of the best kind, and the rarer products of the greenhouse were most abundant.

THE LONDON ROSE SHOW.—Up to the time of going to press, we have not, of course, received the account of the London Rose Exhibition, which took place in early July. Thirty-six silver cups were the prizes. An amount of interest was awakened, the results of which we shall record in our next issue.

POMOLOGICAL SOCIETY.—Especial attention is called to the circular of the American Pomological Society on page 375. This meeting will be an important one.

Mr. W. N. White's article on Hybridizing is full of information; it will well repay perusal.

HORTICULTURAL SOCIETY OF MORRISANIA.—*J. JAY SMITH, Esq.*—As doubtless you feel interested in every thing passing round you, horticulturally, we take pleasure in informing you, that we have just succeeded in organizing a Horticulturist Society in this village. At the preliminary meeting, *F. W. Gilley, Esq.*, of West Morrisania was chosen President, *pro tem*, and *Wm. H. Wilcox, Esq.*, the originator, Secretary. Great enthusiasm prevailed, and it was declared most emphatically, that it was desirable and feasible to establish a society on proper principles.

A grand September Exhibition is proposed, which will beyond doubt be a success, especially as most of our substantial residents have taken great interest in the matter. The name of the society is the "Horticultural Society of Morrisania."

Respectfully,

JEFFREYS, JR.

Morrisania, July 20, 1858.

CATALOGUES, &c., RECEIVED.—Descriptive Catalogue of Fruit and ornamental Trees, Shrubs, Roses, &c., cultivated and for sale at the Coverdale Nurseries, Dr. Edward Taylor, proprietor, Cleveland, Ohio. A well considered list.

Journal of the United States Agricultural Society for 1857. Edited by Benjamin Perley Poore. Washington, 1858.

Illinois State Fair, at Centralia, Marion County. Regulations and Premiums—to be held on Sept. 14th, 15th, 16th and 17th. Fifteen thousand dollars are offered in premiums.

New Jersey State Agricultural Society. List of Premiums and Regulations of the Fourth Annual Exhibition, to be held at Trenton, Sept. 14th, 15th, 16th, and 17th.

Premiums and Regulations of the 9th Annual Fair of the Warren County, Ohio, Agricultural Society. To be held at Lebanon on the 28th, 29th and 30th of September.

Effects of Carburetted Hydrogen Gas on a collection of exotic plants. By George W. Fahnestock. From the proceedings of the Academy of Natural Sciences, Philadelphia.

Synopsis of North American Willows. By N. J. Anderson, Professor of Botany in the Univer-

sity of Stockholm, Sweden. Cambridge, Mass. No doubt published under the auspices of Dr. Gray, and it is full of research.

Statistical Illustrations of the past and present condition of Lancashire, England. By Henry Ashworth, Esq. Highly curious.

Letter from David Landreth of Philadelphia, to the Commissioner of Patents. Biting and strongly put.

Cotton: Its cultivation, manufacture, and uses. A paper read before the Society of Arts, London, March 1858. By Henry Ashworth, Manchester, 1858.

Address before the Chester County Horticultural Society, June, 1858. By Z. Collins Lee.

Wilcox & Felt's Descriptive Catalogue of Fruit Trees cultivated and for sale at the West Feliciana Nurseries, Bayou Sara, Louisiana. A very fine and surprising collection.

ERRATA.—In the article on grapes, written by W. T., Germantown, New York, in the last number the following errors occur: 33d line "in cleaning up hedges I frequently have occasion to dig out," should have added "many an ancient fox grape apparently three score and ten;" and in 34th line, "top roots" should read "tap roots;" 37th line "arranged," should read "occasion;" 43d line "badly," should read "boldly."

ANSWERS TO CORRESPONDENTS.

BIGNONIA VENUSTA.—P. P. T.—The treatment of this fine stove-climber requires that it should not have too much pot room. Confine the roots, give it poor soil and plenty of water during the growing season, and keep the temperature at that time at about 75° by day and 10° less by night, and you will have no reason to complain of want of bloom. In autumn it requires to be cut in rather freely, as bloom is produced on shoots made the same year. The branches should be spread out so as to cover a trellis, or hung below the glass to show the full effect and allow plenty of light to get to the leaves, instead of being tied in a bundle, as is often done. It is one of the most showy and beautiful objects that you can possess.

PRIMULA MOLLIS.—ADELINE.—This is a most beautiful plant with large cordate leaves of from two to three inches diameter, covered with soft hairs. From the centre of this large tuft of leaves springs up the flower stem, which attains about a foot high, and all along it are whorls of handsome flowers of a fine purple colour, which last a long time in perfection, and as the lower stem grows higher, the blossoms keep coming out. It is really a beautiful thing, and should be in everybody's garden.

VINE BORDERS.—S. W.—We can give you, perhaps, no better advice than the following, which we clip from Dr. Lindley's newspaper: Were I to make a Vine border, the following would be my plan: First, I would commence inside the house near the front wall, and excavate to the depth of twenty-one inches and to the width of nine feet. I am supposing the front wall to be on arches, which I should stop for the present with rough brickwork. On the surface of this excavation, which should have a fall of at least six inches, I would place a good layer of some hard material—cement, concrete, broken slates bedded in mortar, or in fact anything to prevent the roots from going downwards. A trench nine inches or a foot should be dug here the whole length of the house, thus securing good drainage. At this point, nine feet from the front of the house, and at the side of the trench nearest the border, I would run up a brick on edge wall, leaving openings in it through which any superfluous moisture might pass into the trench. In this way a box would be provided nine feet wide and eighteen inches deep, with good drainage the length of the house: this might be filled with a compost something like the following: Fresh turfy loam, rather stiff than otherwise (but not clayey), about a third flakey leaf mould and good dung, not too rotten; also a liberal supply of brickbats, broken stones, or

charcoal. By, say March, this would have settled, when I should plant the young Vines, one to each rafter, first soaking their balls and carefully washing all soil from their roots, which should be barely covered with compost and watered slightly with a rose pot. I should now cover the whole border a few inches in depth with droppings from an old Mushroom bed. As the Vines commenced and continued growing the border should be watered occasionally with weak liquid manure, giving enough at each watering to wet the whole mass. I need scarcely add that the atmosphere should be kept moist. In autumn at pruning time the droppings and loose soil should be raked off down to the roots, when I would substitute a top dressing of good fresh loam and a moderate sprinkling of guano, mulching with droppings as before. This I would do annually until I found that my border was either too full of root or the Vines required more to feed upon, when I would add three feet more to the border outside the arches in front of the house, or at the back inside, of course filling up the trench and making another if required. It will be observed that I have not given over stimulating food to the young Vines or in great quantities, because I hold that a moderate amount well digested is better than a larger quantity and of a richer kind than the system requires. My chief object is to keep the plants and soil in a healthy state, and to have complete control over the whole, both root and branch. If these instructions are followed there need be no fear of the result. D. D.

E. H. COCKLIN, Black Hawk co., Iowa.—Your grass is *Tricodium laxiflorum*; named from the Greek word for hair, on account of its capillary inflorescence.

M. R.—The beautiful trailing plant from the White Mountains is *Chiogenes hispida*, or Box-berry, and you will find it highly ornamental for rock-work, &c., &c.

E. Y. TEAS, Richmond, Indiana.—*Spiraea tomentosa*. In forwarding plants it is well to include a flower, and to say whether native or foreign.

A SUBSCRIBER, New York.—After your Strawberry seeds have dried in a bed of pure sand about a month, sow them in a light soil, in a partially shaded spot. Carefully water, and in winter protect them with a covering of straw; in spring, transplant them, one plant in a place and two feet apart; carefully remove all runners until the plants have borne; select the best for trial. If means exist, a better plan is to sow the seeds and sand in a cold frame in a northern exposure, and transplant as above.

S.—Your plant is *Styrax grandifolium*, a most valuable, hardy, fragrant plant; we should be especially obliged by your forwarding us a few seeds.

J. L. S., Virginia.—Pray send the flower or fruit. The leaves are not a sufficient guide always. Is it an annual?

G O S S I P.

THE amount of fruit trees that may be placed in a small garden has frequently been noticed. A recent paragraph from California will be remembered by our readers. We now find it stated that a Mr. Caprotte, near Paris, has three thousand yards long of trellis covered with the Chasselas de Fontainebleau grape, producing him annually on small premises two thousand five hundred dollars.

WE regret to announce, says the *London Gardener's Chronicle*, the decease on the 10th, at Turnham Green of Mr. George McEwen, in the thirty-eighth year of his age. During the fourteen months that he acted as Superintendent of the Garden of the Horticultural Society he evinced so much skill and energy as to make it a subject of the most lively regret that so great a spirit should have dwelt in so frail a body.

THE good that might be done by teaching the use of one's eyes to the young is illustrated by

the Rev. J. S. Henslow, of England, who has a school in which poor children are instructed in Botany and the names of trees and plants. He has lately offered two prizes to his scholars of twenty-five dollars and fifteen dollars for the best collections of dried wild flowers and plants growing within four miles of the school. When shall we have teachers in our public schools who know a willow tree from a gooseberry bush.

THE Messrs. Henderson, of the Wellington Road nurseries, London, says a correspondent, have the following new plants ;

A new *Aucuba*, from Japan, as hardy as *Aucuba Japonica*, with as large, if not larger, leaves, and all the leaves as dark green as those of the Portugal Laurel. This will make a splendid addition to our hardy evergreens. It was got over by Dr. Siebolst, who has an experimental garden at Bonn, on the Rhine.

A new *Rondeletia*, from China—perhaps the free-flowering kind ; but it is very different from *Rondeletia Championi*, having leaves more like a Portugal Laurel on long footstalks, and with the underside as glaucous as the leaves of *Magnolia glauca*.

A new *Conoclinium*, with leaves more like those of *Gesnera zebрина*. *Gardenia citriodora*, having the growth like *Burchellia Cypensis*, and flowering in clusters at the joints of last year's wood, pure white, and as wide as a shilling. A most valuable acquisition to our sweet-smelling plants. Blue *Allamanda* is here also.

They have also *Chamaecyparis thurifera*, which is selling off like "wild fire." This was the Conifer which was balloted for at the Horticultural Society. *Cupressus Lawsoni*, *McNabiana*, and *Bregeoni*, *Thuja gigantea* (Low), and ditto (Veitch) ; the two appear to be quite distinct. *Thuiopsis borealis*, *Podocarpus nubigena*, *Pinus Bungeana*, and many others ; *Picea bracteata*, and lots of "fly flappers," or real standards of *Deutzia gracilis*, from three to five feet high in the stem. Everything is eagerly made into standards now, and gets a ready sale ; this winter house is half full of standards of all kinds, and there is a most valuable sort of fountain Cactus, of the Mallisoni section. I recommend this Cactus to the whole world, and I never saw or heard of it before. It is the work of some amateur, the kind is called *Scotica*. The old plant is trained up round a pillar to a height of seven feet. D. B.

NETTLES.—Most gardeners look upon the Nettle as their enemy, and hence it has been driven forth into by places, or waste land, or the shadow of hedgerows. Nevertheless its fibre makes good linen as the Dutch have found ; the leaves when young are a delicate esculent ; horse-dealers use the seeds to give their cattle spirit and a fine skin ; and finally the roots when boiled with the addition of alum and a little salt form a good yellow dye. Thus it appears that every part of a Nettle may be usefully employed in rural economy or in art. Horned cattle find it a safe and sound food, for it is early and easy to grow ; the worst soils suit it ; it requires no care, will bear any kind of weather, and propagates itself. It may be cut five or six times a year ; and in the spring, when cattle want food, it supplies them with it abundantly. It may be cut young, and given green ; or it may be left to stand longer for hay ; but in the latter case it must not stand too long, or cattle will not eat its coarse haulm.—*French Paper*.

AN inquiry instituted by the Belgian government merits attention. For some years, a notion had grown into a belief that certain manufactories were prejudicial to health and vegetation, and so much disquiet arose thereon, especially in the province of Namur, that the governor reported it to the home department at Brussels. A commission was appointed, two chemists and two botanists, who, commencing their inquiry in June, 1855, pursued it carefully for several months, confining themselves to factories in which sulphuric acid, soda, copperas, and chloride of lime were made. The two chemists watched the processes, and noted the escape of gases from the chimneys. They consider soda factories to be the most noxious, and tall chimneys more hurtful than short ones, because of the greater surface over which they diffuse the vapors ; and tall chimneys, by quickening the draught, discharge gases which other-

wise would be absorbed in the passage. Hence, contrary to the commonly received opinion in this country, they hold that there is less dispersion of deleterious vapors with a short chimney than a tall one.

The botanists on their part show, as might be anticipated, that the effect on vegetation is most shown in the direction of the prevalent winds, and more during rains and fogs than in clear weather. They establish beyond a doubt the hurtful influence of smoke, due to the presence of hydrochloric and sulphuric acid, and they find that the greatest distance at which the mischief is observable is two thousand metres (a little over an English mile); the least six hundred metres. They enumerate thirty-four kinds of trees which appear to be most susceptible of harm, beginning with the common hornbeam (*Carpinus Betulus*), and ending with the alder; and between these two occur, in sequence, beech, sycamore, lime, poplar, apple, rose, and hop. As regards the effect on the health of men and animals, the commission find the proportion of deaths per cent to be lower now in the surrounding population than before the factories were established: from 1 in 58 it has fallen to 1 in 66. One reason for this improvement may consist in the better means of living arising out of the wages earned in the factories. However, the commission wind up their report with an assurance that health, either of men or horses, suffers nothing from the factories, and vegetation so little, that farmers and graziers may dismiss their fears, and the government refrain from interfering.

AN ingenious mode of rearing birds is practised in France. The young birds with the nest are placed in a small cage, and tied up near the place in which the nest itself lay. I have seen the old birds come and attend to the nursing of their offspring in this way with the utmost zeal and success. When we consider how much more skillful they are in finding the best food, and administering it in the best manner, we cannot be surprised that in this way the great losses, otherwise sure to occur, are avoided.

In France, M. Beelard has made some curious experiments on the Influence of Light on Animals, and finds that those creatures which breathe from the skin, and have neither lungs nor branchiæ, undergo remarkable modifications under different colored rays. He exposed the eggs of flies (*Musca carnaria*) under bell-glasses of six different colors: little maggots were hatched from all; but those under the blue and violet rays were more than a third larger than those under the green. Frogs, which by reason of their naked skin, are very sensitive to light, give off half as much more carbonic acid in a given time under the green ray as under the red; but if the frogs are skinned, and the experiment is repeated, the excess then is with those under the red ray. Frogs placed in a dark chamber lose one-half less of moisture by evaporation, than when placed in common daylight.

MISCELLANEA.

INDICATOR BEE STAND.—An ingenious lover of bees has invented a plan for weighing his honey as collected, and gives the following account of his method:

Having lately devised a plan by which to increase my own enjoyment of bee-keeping, it has occurred to me that many others who take an interest in the subject may like to follow my example, and I submit herewith a sketch of an "Indicator Bee Stand," constructed with a view of enabling the bee-keeper to note the progress of a colony in honey gathering all through the season, so as to compare, if needful, the influence of a period of fine weather, say for a week or a few days, in increasing the weight of the hive. The indicator is a spiral spring fitted inside a hollow post, and on the spring is a short piece playing freely into the socket, and on this piece the hive-board is placed. A new swarm, hived in a new hive, would form the most interesting subject for a first experiment. When placed on the stand the weight of hive, bees, and board will be indicated on the dial plate by means of the finger which is attached to the spring, and

as the process of comb-making, breeding, and honey-collecting goes on, the increasing weight acting on the spring will at all times indicate the gross weight superincumbent on it. The one I have made registers up to 60 lbs., but I purpose making one to register to 100 lbs., so as to serve for a set of the large Stewarton or Tegetmeier's boxes, both of which I have and purpose stocking with double swarms this season. The construction of the stand is most simple; the hollow post is of inch stuff, and the short piece that supports the hive is carefully fitted and smoothed with black lead to make it play freely, and as its range of motion perpendicularly is only 3 inches, the action of the spring, even in taking a heavy super, cannot by any possibility cause a jerk. The spring is japanned, to preserve it from the action of the weather; without being so prepared it could hardly be expected to last through a season. The cost of the stand including spring, carpenter's work, and engraving of the plate was 18s., but any one enjoying sufficient leisure and handy in the use of tools might make it for 5s. or 6s. less. As my bees promise to swarm shortly I hope soon to set the stand in action, and anticipate much pleasurable instruction in the daily record of progress which the dial plate will afford me.—*Shirley Hibberd, in London Gardener's Chronicle.*

BEES.—It is well to place hives within a little distance of a small pond, or shallow stream; but if there is no water near, you ought to sink some large dish or milk-pan in the ground close by, in a warm nook if possible, where the sun always shines in the afternoon. Fill it with stones, or pieces of wood, for the bees to light upon, without risk of drowning, when they come to drink. They cannot do without water in spring or summer; and if they find none near, they will go long distances in search of it, especially in dry weather.

In handling bee-hives you must go *quietly* to work: touch them very gently, so as not to knock or jar them; and, above all, never *breathe* upon your bees. A knock will rouse them in a minute, but the breath of man or woman makes them vicious.

Keep on watching your bees through March and April; never let a day pass without looking after them, if you want them to do well. If they go on taking large quantities of pollen into their hive, all is well; but it will sometimes happen that they cease doing so by degrees,—less and less every day. *This is the worst possible sign.* As soon as you discover any idleness in your bees like this, and they cease carrying pollen into their hive *in spring*, you had better take up your hive at once, and get what honey you can out of it. The bees which remain in the hive (and there are often a good many of them) will do nothing but amuse themselves with flying in and out on fine days, and eating up the honey while it lasts, or till they die. The honey you see had better be stored up in your cupboard, than wasted upon idle bees. *Either the queen-mother is dead, or she is getting old and worn out.*

BANANAS IN TEXAS.—According to a Texas paper the Banana perfects itself in parts of Texas, the tree thriving as well as in its native latitude.

NURSERY OF PARSONS AND CO.—We find the following in the Country Gentleman: During a recent visit to this celebrated nursery at Flushing, Long-Island, we observed many objects of interest. It is well known as one of the best in this country. It occupies about one hundred acres of land. A larger portion than in most nurseries is devoted to ornamental trees, evergreens, &c. There is a propagating house 100 feet long, and several thousand feet of cold frames and pits, belonging to the hardy department; in addition to which there is a grapery 120 feet long; a house 40 feet long and 20 wide for stove plants and orchids; one for rhododendrons, azaleas and camellias, 100 feet long, and another for camellias exclusively, the same length; one for Ericas, Epacris, Borronias, Aphelexis, and New Holland plants, 100 feet long; another of the same length for geraniums, roses, and calceolarias; one of 50 feet for acacias, daphnes, and green-house plants; and one 40 feet for bulbs. Connected with this department there is a 100 feet propagating house, and about 400 running feet of brick and stone cold pits. These structures and the open ground contain perhaps the largest collections of

Rhododendrons, Stuartias, Andromeda arborea, &c., in this country: The cultivation of rare plants, and those of difficult propagation, distinguishes this establishment; and we observed that the grafting of evergreens was conducted with great success. We observed in flower the "*Lilium giganteum*," a new plant from the Himalayan mountains—so far as we are aware, the first that has bloomed in this country. The stem grows rapidly, was about seven feet high, and the flowers, of which there were several, were seven or eight inches long, funnel shaped, yellowish white, and streaked inside with dark purple. The leaves are cordate. It is a cold green-house plant of easy culture; the bulb of this was three years old.

A CHINESE GARDEN.—Mr. Fortune gives a 'curious description of a Chinese Garden in a recent letter, from which we make the following extracts:

"The plants consist of good specimens of southern Chinese things, all well known in England, such, for example, as *Cymbidium sinense*, *Olea fragrans*, Oranges, Roses, Camellias, Magnolias, etc., and, of course, a multitude of dwarf trees, without which no Chinese garden would be considered complete. In the alcove alluded to there are some nice stone seats, which look cool in a climate like that of southern China. The floor of this building is raised a few feet above the ground level, so that the visitor gets a good view of the water and other objects of interest in the garden. That this is a favorite lounge and smoking place with the Chinese, the following Chinese notice, which we found on one of the pillars, will testify:—'*A careful and earnest notice*: This garden earnestly requests that visitors will spit betel outside the railing, and knock the ashes of pipes also outside.' Several fine fruit-trees and others are growing near the walks, and afford shade from the rays of the sun. On one of these we read the following: '*Ramblers here will be excused plucking the fruit on this tree.*' How exceedingly polite!

"Near the centre of the garden stands a substantial summer-house, or hall named the 'Hall of Fragrant Plants.' The same notice to smokers and chewers of betel-nut is also put up here; and there is another and a longer one which I must not forget to quote. It is this: 'In this garden the plants are intended to delight the eyes of all visitors; a great deal has been expended in planting and in keeping in order, and the garden is now beginning to yield some return. Those who come here to saunter about are earnestly prayed not to pluck the fruit or flowers, in order that the beauty of the place may be preserved.' And then follows a piece of true Chinese politeness: 'We beg persons who understand this notice to excuse it!' Passing through the Hall of Fragrant Plants, we approached, between two rows of *Olea fragrans*, a fine ornamental suite of rooms tastefully furnished and decorated, in which visitors are received and entertained. An inscription informs us that this is called the 'Fragrant Hall of the Woo-che tree.' Leaving this place by a narrow door, we observed the following notice: 'Saunterers here will be excused entering.' This apparently leads to the private apartments of the family. In this side of the garden there is some fine artificial rockwork, which the Chinese know well how to construct, and various summer-houses tastefully decorated, one of which is called the 'Library of Verdant Purity.' Between this part of the garden and the straight walk already noticed there is a small pond or lake for fish and water-lilies. This is crossed by a zigzag wooden bridge of many arches, which looked rather dilapidated."

DISEASES OF THE PEAR.—The Pear has several times in this country been subject to the most fatal epidemics. Men and animals are not alone the victims of pestilence, but Nature suffers these violent perturbations through all her dominions. It is not surprising that the sudden loss of one tenth of a fine pear orchard should discourage and alarm the fruit-grower; still he ought not to forget that its cause is exceptional, and will pass away. These diseases, though prevailing for several seasons in succession, occur only at long intervals; and the period of a disease being terminated, we may usually calculate upon exemption from it for a considerable time.

Winter, or Frozen Sap Blight.—The diseases of the Pear, known by Pomologists as Leaf-

Blight, Summer-Blight, Winter-Blight, Insect-Blight, and Frozen-Sap-Blight, are generally, at present, recognized under the two latter terms, though we think the leaf-blight an entirely distinct disease. There has been so much speculation upon the causes of *Winter or Frozen Sap Blight*, and so many remedies recommended, that we are not prepared to adopt any of the theories in explanation of it, or any nostrum as a specific.

The pear tree is a greedy absorber of fluids, and when the warm rains of September excite its absorbents, the gourmand drinks up large quantities of nutriment, and a late and rapid growth of shoots is formed. In these succulent and unripe growths, the sap is retained without that vitality of leaf which will effect its maturity and assimilation, being thin and watery, and not sufficiently matured to enable it to resist the frost, and death ensues. In the plant as well as the animal, great length of time often elapses before the poison affects the whole system and causes death. It is not unfrequent that the tree, poisoned in autumn, survives till the July following. The bark of the trunk and principal limbs exhibits black spots; and on cutting into them, the bark and wood, for some distance beneath, are found quite dead and black.

The only remedy is, to cut away at once all of the tree that is affected, cutting below the lowest spot. But few trees attacked with this disease will be of much value, even with the best treatment that can be given them. Out of forty trees, six or eight feet high, thus affected in one season, we succeeded in saving the stumps, two feet high, of only eight or ten. These trees had been brought from a distance, and planted the fall preceding the attack, and exhibited by their large, thrifty shoots, that rapid unripe growth above mentioned.

Notes for the Month.

VINEYARD CALENDAR FOR AUGUST.

BY R. BUCHANAN, CINCINNATI, OHIO.

THE work of the vine dresser this month will be light. Summer pruning is generally finished in July, and in August, tying up straggling branches of the vine, and keeping the weeds down, by the hoe or cultivator, is all that is necessary. By the middle of the month all apprehensions of injury from the grub are over, and the only thing to be dreaded is a hail storm. From other casualties of the climate, the crop is safe.

NOTE.—Owing to very wet weather in May, and early June, succeeded by cold nights and foggy mornings, the mildew and rot have made sad havoc in the vineyards in Ohio, Indiana, Illinois, and Missouri, destroying more than half the crop. The heavy rains whilst the Grape vines were in blossom, prevented the fruit from setting well, and left it in an unhealthy state, easily subject to injury from mildew, and laying the foundation for rot, in the larger berries not affected by mildew. The sulphur remedies could not be applied early enough in the season to afford a fair test of their value, but some persons who tried them late, thought them useful. It will take another year to decide this question.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

PROPAGATION BY CUTTINGS.—This is one of the most common and available modes of extending plants. A cutting is simply a part of a plant taken off and placed in a position to form roots, and become in all respects a living representation of the original from whence it was taken. The constitutional conditions, or special proportionate arrangements of the constituents of plants most favorable for the emission of roots, has not been determined. While, therefore, some will throw out roots under any conditions, others will do so very tardily under the most favorable circumstances.

Cuttings taken from extreme points of shoots will produce early flowering plants, and frequently a tendency to bushy and dwarf growth; those from side branches, incline to horizontal growth, and in some cases it is only by securing an upright shoot from the base of such side growing plants that upward growth is obtained. These peculiarities are not constant, and are not considered important, although occasionally useful for particular purposes.

The formation of roots is dependent upon the previous or immediate action of leaves; the best shoots therefore for propagation are those possessing a considerable portion of the organized matter consequent upon maturity, but in which the processes of growth are still in full operation; in other words, those shoots that have commenced to mature, but are possessed of healthy, active foliage.

Cuttings of young and succulent shoots, are immediately dependent upon the simultaneous growth of the stem for their successful rooting, the leaves must therefore be preserved in order to assimilate matter for root formation.

It is necessary to surround the cuttings by an atmosphere containing a uniform degree of moisture. All moist bodies, when placed in a dry atmosphere, lose moisture by evaporation. If the cuttings are subjected to aridity their contained sap will speedily be exhausted, and they will shrivel and die. Hence the practice of propagating in close fitting frames, or covering with a bell glass to ensure the required atmospherical temperature and contained moisture.

Light in excess is equally injurious, shading is requisite from strong sunlight; care is required, however, that enough light be admitted to maintain a healthy leaf action.

Every one who has experience in this mode of propagation is aware that under certain conditions, cuttings will grow and increase at top without forming roots; while under others the same kind of cuttings will produce roots without indicating the slightest symptoms of growth by external buds. Heat is the great stimulus to the vital forces of plants, and when the atmosphere in which they are placed is of a higher temperature than the soil in which they are inserted, the branches are excited to growth. On the contrary, these conditions are reversed when the soil is a few degrees warmer than the air; roots are then encouraged while the stem may remain stationary. In propagating cuttings it is therefore a good general rule, to place them in the lowest average atmospherical temperature that they will endure, to retard upward growth, and, on the other hand, to raise, by the application of artificial heat, the soil to the highest average temperature, in order to stimulate into activity the processes carried on in the vessels beneath the surface of the soil, and the more completely these conditions are secured, the greater the chances of success.

GRAPERY.—In cold houses the grapes will be approaching towards maturity. Maintain a healthy, vigorous growth, by watering occasionally with liquid manure. It is much preferable to apply stimulants at this time than to grow in a highly enriched border. The fruit will certainly not color or ripen to perfection, unless a vigorous growth and an abundance of healthy foliage is preserved. The close spurring and close pinching system of management is the principal cause of badly colored grapes. Allow the lateral growths to ramble now at will, "the maturation of the fruit is dependent upon the action of leaves and roots, and the secretions that it forms are principally derived from the former. Consequently, whatever contributes to the healthy condition of the leaves and roots will have a directly beneficial influence upon the fruit."

ROOT PRUNING.—The root pruning of trees as a means of promoting fruitfulness does not seem to meet with much favor. As a system for general culture it will not, of course, be popular, neither is it necessary. Occasionally, however, it may be practised with decided advantage. Where fruit trees are growing in very rich soil, such as in small, highly cultivated gardens, and produce annually an immense crop of branches, but no fruit, cutting off a few of the strongest roots is at once the most simple and certain method of checking growth. If this is carefully performed early this month, fruiting buds may be formed before the completion of growth.

TRELLIS WORK.—In small gardens where intricacy and variety are desired, but where the limited space prevents the planting of trees and shrubbery in sufficient quantities to effect this purpose, an expedient may be adopted in the form of a screen of trellis work covered with climbing plants. Rustic work is well adapted to form such erections, but is expensive if properly constructed, and if it is not, will soon decay. Smooth slats are perhaps preferable, and when painted of a brownish green color are not particularly conspicuous.

Screens of this kind should be put up so as to present somewhat of an architectural appearance, divided into panels by projecting piers, and the elevation relieved by mouldings, &c. In certain positions it may assume the appearance of a gate-way or entrance to a part of the grounds. Such screens may often be advantageously employed to form a division between the vegetable garden and flower beds. Much of their efficiency and appropriateness will depend upon the manner in which they are connected with surrounding objects.

For really effective growth the hardy grape vine is the most reliable; the Virginia creeper is next in order. *Aristolochia siphon*, *Bignonia radicans*, the various hardy clematis, *Wistarias*, &c., may be also introduced. In summer any of the free growing annual climbers may also be planted.



PARALIA UNCLIFORMIS

A Trip to Canada.



O much has the intercourse between Canada and the United States increased of late years, that we might naturally suppose a knowledge of what such near neighbors as the British across the line are doing horticulturally, would in some mode find its way to *our* homes. But so entirely without that kind of information did we find all who were questioned about it, that we determined to see for ourselves. From the tropics visited last season, it would afford a fine contrast of climate ; we expected little, for the trees of a cold climate must be limited in comparison. But do our cousins on the other side of the St. Lawrence take an interest in our pursuits ?

Consulting the publisher, we found a most respectable number of readers of the *Horticulturist*, and taking staff and scrip, we entered on the long career of railroads and steamboats, and their great and little discomforts, to talk with these unseen friends. The reader shall hear how we sped.

We found many on the route still eager in the pursuit of beauty ; planting, gardening, or watching the grape and fruit house. Wodenethe was more beautiful than we had ever seen it ; the quiet fruition of judicious and tasteful outlay was most apparent ; the evergreens, old and new, were in their loveliest spring apparel ; a "ribbon garden" of verbenas carried out that beautiful assorting and blending of five colors which we had almost despaired of seeing ; it was a thing accomplished ; hundreds of plants, each color in a row, are arranged in the form of a ribbon hastily unwound ; the effect is highly artistic and gratifying.

At *Utica*, diverging a short distance southward, we found the Clintonians around Hamilton College pursuing rural art, under the auspices of a society for the purpose, with an eagerness that is making its mark rapidly on the College grounds, as well as the private gardens of the members. Our correspondents, the Rev. A. D. Gridley and Professor Edward North, are in the full career of garden enjoyments ; Professor Root and many of their neighbors are not less enthusiastic, active lovers of the fine art of landscape gardening.

At *Trenton Falls*, the proprietor, Mr. Moore, is as great a devotee to trees as ever, and cannot be persuaded to destroy a single specimen so bountifully planted by nature in his lovely domain ; his house is still a favorite, and no wonder, for it offers every comfort, and is full of artistic adornments, brought together by a liberal and excellent taste, making it one of the most agreeable summer resorts in America.

Niagara Falls reached, we found the American side greatly increased in population, hotels, manufactories, and all sorts of invasions on the grandeur of the scene. Were the Falls not on so grand a scale as to defy the art of man to destroy them, they would not so long have survived the taming hand of commerce. As it is, they build factories and workshops, disfigure this noblest temple of nature by showy hotels within the sound of the cataract, and have had the bad taste to attempt grand dinners, with music and frogs as part of the bill of fare, where one would fain be content to

worship the ever-recurring song of the waterfall, or the bending of heaven's own bow, and where silence in such a presence would best become the pigmy, man.

Little or no cultivation in the way of gardens has been attempted by lessees or landlords ; a proper feeling still preserves Goat Island unharmed of its hardy growth, and we trust it will long be left to nature's own handiwork.

On crossing to the British side, it is usual to hear the exclamation, "What a beautiful garden!" The Clifton House has this merit, but if you examine a moment, it owes its character mainly to its shaven lawns ; there is no attempt at variety, or even much planting ; good mowing and well-kept walks give an air that, we are sorry to say it, makes it seem, by contrast, so neat for a publican's grounds, as to induce the general admiration we have alluded to.

There is less attempt at a grand display of dining paraphernalia, but quite as much comfort here as on the American side ; and were it not that some of the gas-burners were also *leakers*, the traveller would find the Clifton, with its full view of the Falls, an excellent temporary home.

Buffalo and Black Rock. These places may now be classed as one great city, for the streets connect, and wide avenues bordered by extremely handsome houses, tell the story of accumulated fortunes ; comfort and independence seem to smile from every portico ; the grapery, conservatory, and green-house are of frequent occurrence. A hasty interview with valued correspondents here was all that we could indulge in ; but we never shall forget the view of the port of Buffalo, as a steamboat launched into its broad and noble expanse, and bore us onwards to Chippewa and the Falls. We shall endeavor to confine our remarks to topics adapted to this journal, but where there is so much to observe, this is extremely difficult.

The waters of the lakes, at the Falls and in the rivers, have been very high for some months, and the scene consequently is more strikingly beautiful. At Buffalo the rise was variously estimated at from two and a half to four feet above the usual level. This increase was perceptible quite to Quebec. The Rapids of Niagara, the Fall, the Whirlpool, and the entire St. Lawrence, including the Rapids, all exhibit evidence of an unwonted volume of water. This has not been without its effects. A huge rock, breaking the former continuity of surface of the American Fall, tumbled into the abyss below with thundering noise the first night of our arrival ; successive disasters of this kind may be remarked by old visitors to the place ; but we cannot venture on Lyell's field to prognosticate how soon the fall is to reach Lake Erie.

From the Falls by railroad to Hamilton, of Canadian chief grape celebrity, and thence to Toronto, is accomplished in a brief space of time. Parliament was in session ; speakers in robes, and the members discussing the loans and debts of the "Grand Trunk Railway," now the great topic ; a passing wag tried to convince a party of ladies it was so named because it was the great conveyancer of the modern *grand trunks* which people are willing to convey wherever they travel, and which *impedimenta* seriously inconvenience all parties when a stage coach has to be chartered ; we saw a stage so loaded behind with heavy trunks as to throw the front, tongue, passengers and all, upright in the air, to the infinite danger of strangulation to the quadrupeds who were destined to its draft.

Toronto, still the capital, presents few attractive features to the traveller,

except the Government Library, in which are collected many treasures that have not found their way across the border. The sandy soil of the site is a drawback to the planter, but they are active in public works, have a long planted avenue leading towards the grand new college in progress, and efforts are made by private individuals to secure beauty and shade on their premises which have not been in vain. Probably the talked-of removal of the government officials to Ottawa has retarded the progress of Toronto. The Governor's mansions, in town and out, have some fine trees. Leaving till next month a brief allusion to the Rapids of St. Lawrence, we come to

Montreal. Few sites for a city can ever expect to rival Montreal for beauty of situation. The lower part is devoted to business, and rising like successive terraces, the views are as fine as eye could wish. The winter climate, though severe, is less so than that of Quebec, and around both, that of summer is not exceeded for salubrity and beauty. Their flora may be less than that of more southern latitudes, but the grass and trees are as green as any part of the United States; if they have fewer ornamental trees to select from, they treat the very considerable number they possess so judiciously that the eye scarcely misses the deficiencies. In bulbs, roses, and bedding out plants they quite equal us—indeed we were sometimes tempted to think they exceed our average. Glass is so extensively used, that they have a great supply ready for the first blush of spring; we saw as good beds of verbenas, &c., as in the most favored regions.

Our expectations of seeing ornamental places, green-houses and graperies, were greatly exceeded on our arrival here. Horticulture is much in favor, and there are probably more glass structures for fruit and flowers in Montreal, than in any other city of the same population on our continent.

We found the amiable President of their effective Horticultural Society, James Ferrier, Jr., Esq., son of the Hon. James Ferrier, and the able Secretary, S. Jones Lyman, Esq., prepared to receive us, and make our stay in every respect agreeable and instructive. Mr. William Brown, of the Cote des Neiges Nurseries, near the city, was also in waiting to give us his valuable time and services in a tour of inspection. To these and others we are under great obligations.

The old town of Montreal is at the foot of the mountain, the gentle first ascent of which has been finely treated by laying out wide streets, and cutting up the ground into large lots of many acres each—some smaller and some more extensive. The views thus obtained are of the finest description; city, river, and distant mountains afford an ever-varying scene; the changes of light from sunshine to storm, from the half concealment of mist or rain, the moonlit distance, and the rising of the sun, are here enjoyed *in perfection*. Taking advantage of the mountain side, each seat has some novelty of scene, some variety of surface, some peculiarity, which makes an ever-recurring anxiety in the visitor to discover who has been most successful in selecting the commanding locality. Where so many are extremely beautiful, it is difficult to decide. We proceed in the order in which we visited them.

Seat of the Hon. James Leslie; Peter Turner, gardener. This is a very handsome and most comfortable and home-like residence, with a garden in which excellent care was evident in each operation in progress. Early in July everything had the luxuriance of spring; the roses were in perfection, and a vast number of fine flowers and fruit trees grace every nook and corner. Peaches of good quality are produced on walls, or covered by matting

on cold nights, precisely as in England; the Black Apricot is hardy with moderate shelter. Mr. Leslie's graperies were in excellent condition. He cultivates the Black Hamburgh, Black Cluster, White Sweetwater, Royal Chasselas, Wellington, &c., and has a prospect of a noble crop. Mr. Turner has exhibited native grapes from the open ground, but generally only moderate success attends their culture in Montreal.

Mr. James Cooper, a most worthy and estimable man, is engaged very extensively as a market gardener. For years he has been one of the successful competitors at the Horticultural Society's exhibitions. His green-houses, containing a valuable collection of plants and vines, were destroyed during the great fire, but he has lately built a commercial graperies in excellent style, and expects to be rewarded by the sale of the fruit, at fifty cents the pound. His vines are young, but very promising.

A. M. Delisle, Esq., has a young graperies, a conservatory attached to the house, and a fine garden, filled with fruit and flowers.

William Lunn, Esq.; Mr. Middleton, gardener. Here we found all the accompaniments of a gentleman's homestead; a great extent of glass, and more going up; large plots of the newest verbenas and other showy bedding plants; graperies in the finest health, and a commercial business transacted which evidenced a most extensive demand for the ornamental, no less than the useful. Mr. Lunn is an enthusiast, who combines with a love of the subject a spirit of enterprise which gives him the full enjoyment of his pursuit, with no doubt a good return.

Mr. Lunn has plantations of grapes in the open air, including the White Sweetwater and Black Cluster, and has occasionally ripened the Black Hamburgh, by great care, without protection. His neighbor, *Henry Chapman, Esq.*, has a very fine stove and green-house, containing a valuable collection of choice exotics and rare plants, maintained at considerable expense. The grounds are laid out with taste, and evinced careful cultivation.

Mrs. Holland's seat; John Ingles, gardener. This is a very fine example of successful planting, good keeping, and of a lovely home. The operations of a thorough establishment are ably superintended by Mr. Ingles. His lawns were in the best condition of an English garden; flowers and fruit seemed regardless of the winters they had encountered, and smiled and coquetted with the sun as if they had never known the absence of its ardent rays. The graperies here is worthy of remark, but where nearly all the houses we visited were in the best order, it seems almost invidious to particularize. The English style is conspicuous everywhere, and it needs no comments of admiration.

Seat of J. B. Greenshields, Esq.; John Hele, gardener. Raywood, the name of this place, is finely managed, both in its laying out and keeping. It is situated on a steeper slope than most we have mentioned, but nature seems to have designed the ground-plan, and art has stepped in to aid and complete a scene that has few compeers in America. By raising the knolls here and there, the finest possible views are obtained, and most beautiful and comfortable ornamental seats brought from Scotland, are placed in the happiest positions. A carriage road is made to wind in perfect taste among trees and flower-beds, exotics, &c., to a mansion of elegance and comfort. The fruit garden and grape house deserve notice, but we can only mention these features, here so universal.

It should be observed that the ascent of the mountain was covered with

trees when the improvements were commenced; these have been left, and advantage taken of all that were worthy of preservation. Where a mound or bank was necessarily to be increased, a stone wall has been built round the butt of the tree to admit air to its roots, sometimes to a very considerable height, and the tree thus preserved. Altogether, we have rarely seen anywhere a finer sight, or a country seat in better taste; Mr. Green-shields has set an example, of which Montreal may well be proud. If one's surroundings are no unimportant adjunct to happiness, Mr. G. has his materials of enjoyment in great perfection.

John Redpath, Esq., has a very fine site in immediate juxtaposition, and possesses some remarkably fine evergreens—white and black spruce—with other older artificial planting. His views over the city and beyond are not to be outdone by any of his neighbors. Neither Mr. R. nor his gardener were at home, but even without their aid we made many discoveries of beauty, which we have not space to chronicle.

Opposite Mr. Redpath's is the residence of *John Dougall, Esq.*, celebrated for his extensive collection of tulips and hyacinths.

Hon. Charles Wilson possesses about six acres; John Carrol, gardener; his lawns were in the full glow of new cutting, his iron fences and hedges in the best condition, and all enlivened by views, flowers, and a laughing spring day. The places of *Mr. Guy*, *Mr. Mosson*, and *Mr. Judah's*, which time precluded us from entering, are evidently also in fine keeping.

The Seminary Gardens, belonging to the Roman Catholic priests, are an older formation, with features of a large farm highly cultivated, and with an endowment in the nature of a Seignorage over all Montreal, that has long given the establishment the advantage of a large income. Here is found the celebrated Bon Chrétien Pear trees, planted by the original French settlers, two hundred or more years ago, and which are still in full bearing. This pear is the great fruit of the neighborhood, generally producing good crops on both old and new trees. The proprietors have planted large numbers of dwarf apple trees, and apples seem to be in high favor, a staple product in most of the gardens of Montreal, producing a larger return than any other orchard or garden fruit. They possess in this an advantage over Quebec, where it is less productive; in many neighborhoods at least.

The Hon. George Moffat has a fine place on the St. Antoine road; Mr. Wheeler, gardener; a grapery, as usual, and the place in good keeping.

Ira Gould, Esq., a native of the States, has a handsome house and grounds.

John Torrance, Esq., has a most charming house and grounds, greenhouse and vinery, with every luxury that can be desired, including a good library, works of art, &c., &c. These advantages seem to be general, and the stranger is strongly impressed with the excellence of the people, their high refinement and hospitality.

Rose Mount, the seat of the Hon. John Young, is situated on the side of the mountain, commanding an extensive view of the Island of Montreal. His gardener, John Archibald, unites with the experience of many years devoted to horticulture, excellent taste in the management of the grounds. This is manifest in the successful cultivation of the flowers and fruits, in the well-trimmed hedges, the extensive walks, and carefully kept banks of grass, as well as the picturesque moss-houses which adorn every part of these beautiful grounds. Every flower seemed the most perfect of its kind

—a triumph of floral skill. Mr. Young is a man who has identified himself with the history of Canada, and the same enterprize and zeal which has characterized him in the service of his country, is manifest in his devotion to horticultural pursuits. All that wealth can procure and a cultivated taste can suggest, he has gathered around him at his beautiful residence.

The residence of *Don Ross, Esq.*, in the mountain notch, might appropriately be called "Inter-Montes." It has the highest elevation of any of the mansions which adorn Mount Royal. Mr. Lowe, his intelligent gardener, has a thorough knowledge of his profession. The green-house is very extensive, and contains fine collections of plants in excellent order. This place is comparatively new, and when the improvements now in progress are complete, it will be one of the most attractive on the island.

Returning to town, we next visited the mansion of the Hon. James Ferrier; J. Nairne, gardener. This well-ordered place is situated in the heart of the city. From the drawing-room you enter a beautiful gothic arched green-house, from the gallery of which a coup d'œil is presented of a large collection of rare and valuable plants. Conspicuous is the Fern tribe, of which Mr. F. has 105 varieties. The stove-house contains a beautiful collection of the Lycopodiæ; many varieties of the air plants; a specimen of the Banyan Tree; and several new Begonias, which we do not remember to have seen elsewhere; the whole in the finest condition. Mr. F. has grapes in full bearing trained on the outside of the green-house, which seems a most favorable position, and at the same time has a very pretty effect. This appears to most a new application or use of glass; the vines trained on the *outside* receive benefit from the heat within, which at night may be more or less considerable. In this way we were assured very fair crops of Black Hamburgh grapes are often produced, even *out of doors*, in Montreal. The grounds, though not extensive, contain all the requirements of an elegant and retired residence. With Mr. Ferrier, Jr's., taste and knowledge of horticulture, and a liberal expenditure, we wish to see nothing more attractive.

The difficulties which are surrounding us in the States, and the coldness of many portions of the northern continent, would seem to indicate the necessity of employing Orchard houses by those who would have fruit with certainty. Next month we shall publish a description of such structures, now so general in England, and beginning to be common here, and give their results.

In review of our too hurried visit, our impressions are that in the residences more regard is paid to comfort and substantiability than to ornament. The houses are built with thick walls of gray limestone, with double winter windows, rendering them comfortable in the coldest seasons, and delightfully cool in summer. Landscape gardening resembles much that of England. The green-houses and vineries will challenge comparison with any city in the Union. The fruits most successfully cultivated are the Apple, the Plum, Gooseberry, Raspberry, &c., and a few varieties of Pears, including Grapes grown under glass, as well as Melons. The market furnishes the finest Cauliflower, Cabbages, Onions, &c., on the continent. The Horticultural Society, now in its teens, has done good service in promoting a taste for horticultural pursuits. *It receives aid from Government*, and has its annual exhibitions, at which three hundred dollars are distributed in prizes. Mr. Ferrier's and Mr. Lyman's enthusiasm, aided by a most in-

telligent set of excellent and well-educated gardeners, as well as a liberal outlay among employers, gives to this society a gratifying eminence.

Horticulture is indeed making rapid strides in Montreal and in Canada generally. What we might consider the difficulties of the climate, they seem to conquer by the wand of industry, and really their achievements in any climate would be highly creditable and satisfactory. Summer here is a delicious season—equal to any in the world—and much resembling that of England, with the addition of some few warmer days to ripen their fruits.

The Cote des Nieves Nurseries of Mr. William Brown are a triumph of skill. The site was taken up when overgrown with bushes, and reclaimed at great expense of money, time, and labor; where the wild fern and the moss received the trickling rill from the mountain, now blooms the rose and all the varieties of ornamental objects which the climate will allow, in addition to large quantities of fruit trees and bedding out plants. Mr. Brown is a highly intelligent and useful citizen, and by his pen is qualified to enlighten, as he has already done in these pages, his fellow-laborers in the good cause.

But we are anxious to confine ourselves to facts, and must reluctantly leave Montreal till another season can make us more fully acquainted with its inhabitants and its lovely gardens, which we are afraid most visitors from the Union have rarely seen. The highest civilization is always accompanied by a garden; we are almost prepared to say that a neighborhood where the garden is utterly neglected, approaches a state of society which in other respects does not mark progress. We might even go further, and declare that a knowledge of gardening is an essential to the full cultivation of the mind; we see it always where education has made the truest progress.

It is within the scope of this article only to mention here the Great Victoria Tubular Bridge, at Montreal, connecting with the Portland road. The piers are all built, one section of the tube is finished, and another is in progress; it is to cost \$1,750,000; is two miles in length, and calculated for a single track only; at its airy height, it looks, as you pass under it, as if it would admit only a small wagon.

In our next we must go back to carry the reader through the Rapids of the St. Lawrence, and then try to picture Quebec horticulturally.

RED SPIDER UPON EVERGREENS.

In the last volume, at page 383, a correspondent states that his Norway spruces were badly infested with red spider. I have intended for some time past, to make a somewhat similar statement in regard to a plantation of young balsam firs, in which I was interested some years since. In the summer of 1854, (I think in July,) they became so completely overrun with this insect, that I feared they were permanently injured. The weather was extremely dry, and there being several thousands of trees, mostly from two to five feet in height, it was impossible to succeed in dislodging the enemy by any artificial application of water. Fortunately, when we had become seriously alarmed for their safety, we were favored with a continuance of cool rainy weather for a sufficient length of time to totally exterminate the insect. Indeed, so thorough was the destruction among them, that during the remainder of that and the following seasons, they did not cause the least trouble.

JUVENIS.

MOUNT VERNON AND THE LADIES.

EVERY patriot rejoices at the decided manner in which the purchase of Mount Vernon has been undertaken by the ladies of the Union. Those associated in the state of New York are doing their duty in a highly praiseworthy manner ; and have forwarded us their circular, which it gives us particular pleasure to publish entire.

What has been determined on as to the future keeping of the place, it would be too early to state ; but we hear it whispered that the services of George C. Thorburn, of Newark, N. J., have been solicited, and probably obtained, to fill the office of curator or superintendent. Whoever may be appointed to the position, we feel sure will receive the support of the public so long as he retains the sacred spot in good taste. It is to become the shrine of worshipping patriots for all ages ; but in the meantime let every one remember that the ladies require assistance in the form of real money.

Appeal to the ladies of the State of New York for the purchase of Mount Vernon.

The "MOUNT VERNON LADIES' ASSOCIATION OF THE UNION" has been incorporated by the State of Virginia, and the necessary powers have been given to it, in its corporate capacity, to purchase and hold two hundred acres of the Mount Vernon Estate, including the Mansion and Tomb of Washington, the Garden, Grounds and Landing, on the Potomac River.

The sum to be raised for the purchase and future improvement of the property, is limited to five hundred thousand dollars.

A Constitution and By-Laws under this Charter have been adopted, by which the business of the Association is to be managed by a Council, composed of a Presiding Officer or Regent, and of Vice Regents, selected one from each State of the Union.

MISS ANN PAMELA CUNNINGHAM, of South Carolina, who for many years has been engaged in this enterprise, and through whose zeal and energy the Charter was procured, and present funds collected, has been appointed to preside over the Council as Regent.

The Vice Regent for the State of New York is MISS MARY MORRIS HAMILTON, of Westchester County.

"Any citizen of the United States, from whom the Regent, any of the Vice Regents, the Secretary, the Treasurer, or any Local Board or authorized agent, may, for that purpose, receive or recognize the receipt of the sum of one dollar, shall be a member of the Association ; and the payment of the further sum of one dollar, on or before the 22d of February, in any year, shall entitle a member to attend and vote at the annual meeting of the Association of that year."

On the 6th of April last a contract, legally obligatory in all respects, was made with the proprietor of Mount Vernon, for the purchase of the two hundred acres desired, embracing the Home and Tomb of Washington, Buildings, Wharves, etc., for two hundred thousand dollars.

Eighteen thousand dollars were paid down in cash.

Fifty-seven thousand dollars are to be paid on or before January 1st, 1859, and the remainder in three equal annual instalments, on the 22d of February, 1860, 1861, 1862, with the privilege of paying the whole amount, due at any time, upon giving 30 days' notice.

It is the earnest hope of the Association that the purchase money will all be paid before the next anniversary of Washington's birth.

The Vice Regent of each State has been duly empowered to organize a Board, for collecting funds in the State represented by her. The following has been adopted for the State of New York, as a simple and practical method, and is now offered for the purpose of enabling every one, through its length and breadth, to unite in securing this national object, so long desired, and so dear to every American heart. What proportion of the whole sum is expected from our State cannot now be named, but it is confidently believed that, if necessary, the whole amount would be forthcoming.

The office of the Association in the City of New York is in the COOPER INSTITUTE, *Astor Place*. The Vice Regent will be assisted by a Standing Committee of ladies, by a large number of lady Managers, and by an Advisory Committee of gentlemen from different parts of the State.

The lady Managers will be appointed in each county, city, and large village, by the Vice Regent, or by a member of the Standing Committee, to collect subscriptions, and forward the amounts received to the person appointing them.

The funds collected (deducting necessary expenses) are to be deposited in the New York Life Insurance and Trust Company, until required for the payment of the purchase moneys of the property, to be drawn out only on the draft of the Vice Regent, countersigned by at least three of the Advisory Committee of gentlemen. The name and residence of each subscriber, from one dollar and upwards, will be recorded upon the register of names, to be preserved among the archives of the Association at Mount Vernon.

Regular meetings of the Committees for consultation and business will be held on the first Tuesday of each month, at 11 o'clock A. M., at the office in the City of New York. The office will be open daily, from 9 A. M. to 3 P. M. where subscriptions will be received in person or by letter, and any further information given.

All communications must be addressed by mail or city post, to "Ladies' Mount Vernon Association, City Post Office, Station D, New York."

MARY MORRIS HAMILTON,

Vice Regent for New York.

NEW YORK, July 20th, 1858.

Ladies' Standing Committee:—Mrs. Millard Fillmore, Buffalo; Mrs. Pierre Van Cortlandt, Croton; Mrs. William H. Seward, Auburn; Mrs. Gouverneur Morris, Morrisania; Mrs. Washington Hunt, Lockport; Mrs. Samuel Stevens, Rochester; Mrs. Horatio Seymour, Utica; Mrs. Johnston Livingston, Livingston; Mrs. G. S. Silliman, Brooklyn; Mrs. Edward Cooper, New York; Mrs. Andrew J. Downing, Fishkill Landing; Mrs. George Bancroft, New York; Mrs. John Sherwood, New York; Mrs. Charles P. Daly, New York; Mrs. Marshall O. Roberts, New York; Mrs. Lewis M. Rutherford, New York; Mrs. John Macgregor, New York; Mrs. Walden Pell, New York; Mrs. Edward M. Smith, Albion; Mrs. C. M. Kirkland, New York; Mrs. Herman D. Gould, Delhi.

Advisory Committee:—Hon. John A. King, Governor of New York; Mr. Samuel B. Ruggles, New York; Mr. Washington Irving, Tarrytown; Mr. Daniel S. Dickinson, Binghamton; Mr. Henry R. Selden, Clarkson; Mr. Frederic De Peyster, New York; Mr. Benson J. Lossing, Poughkeepsie; Mr. E. D. Morgan, New York; Mr. William Kelly, Rhinebeck; Mr. Erastus

Corning, Albany ; Mr. Robert B. Minturn, New York ; Mr. Charles Augustus Davis, New York ; Mr. Royal Phelps, New York ; Mr. William Samuel Johnson, Ellicottville ; Mr. James S. Wadworth, Geneseo ; Mr. Thomas H. Bond, Oswego ; Mr. Edward Huntington, Rome ; Mr. Heman J. Redfield, Batavia ; Mr. E. W. Leavenworth, Syracuse ; Mr. David Rumsey, Bath ; Mr. Daniel B. St. John, Newburgh ; Mr. James O. Putnam, Buffalo.

[What is doing in other states on this subject ? Is Pennsylvania moving ?—*Ed.*]

THE WALTONIAN PROPAGATING CASE.



REQUENT references to the Wardian case have made most readers familiar with its uses, but little has been urged in this country to a special form of a plant case known as the Waltonian, in which the principle of a heated plant house is brought to perfection. Strictly speaking, it is not a Wardian case at all, but a propagating pit—in fact, a hot-house suited to the drawing-room ; and it is considered of such practical value, and withal so simple in structure and management, that it may be accepted as an adjunct to the very best cultural contrivances, as it will also be found the most efficient scheme the inexperienced lover of flowers can adopt. We copy from a new English book on Rustic Adornments.

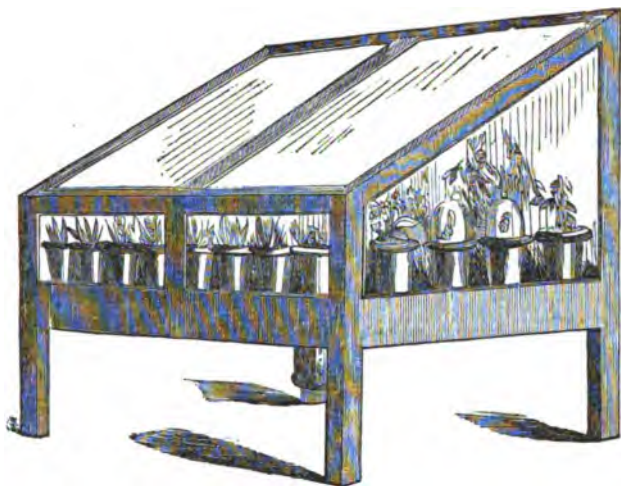
“Mr. Walton himself never struck a cutting before he invented the case for himself ; but after setting his first case to work, he learned to perform operations that in the ordinary way require years of tuition and experience. Now that the best form, the best measurements, and the exact details of construction have been determined by experiment, no one, however previously ignorant of ordinary gardening operations, need find it difficult to produce an abundance of stock for the garden, the green-house, or the window ; for it may be a hot-house, an intermediate house, or a cool pit, just as you please, by a very simple regulation.

“The Waltonian case is fashioned in the style of a garden-frame, the framework being of wood, with side and top lights, a boiler and lamp for supplying heat, and a tray of sand on which the pots are placed. The annexed figures are drawn from the one which I have in use, supplied me by Mr. West, of Surbiton, who is the original maker of the cases, to whom, indeed, we are indebted for many improvements based on Mr. Walton’s first idea, and the suggestions of that eminent horticulturist, Mr. Donald Beaton.

“As this description must be brief, I will at once refer the reader to the perspective view of the structure, closely stocked with seeds and cuttings, as it adorns my study window at the moment of writing this. The framework is of wood, and may be either plain deal, as mine is, or any ornamental wood with elegant mouldings. The front and the two ends are fitted with glass ; the back is wholly of wood ; and on the top are two lights laid on loosely. There is room inside for thirty-two four-inch pots, in four rows of four each, under each light, and these pots stand on a thin layer of silver-sand kept constantly damp, and heated by the boiler immediately beneath it. The lamp in front is a common tin one, burning colza oil, and the cost of

working is barely a shilling a week. The lamp is understood to burn eight hours, but I find I can, if necessary, to trim it that it will burn twelve, or even fourteen ; so that five minutes twice a day is all the attention the case ordinarily requires.

“ Having glanced at it so far, let us now take the case to pieces. The top



lights lift off without troubling with hinges, hooks, or attachments of any kind. They are simple squares of glass let into a zinc binding, and with a ring by which to lift them. This plan allows them to be shifted to give air to any extent that may be necessary. Having removed these, we find the pots standing on clean damp sand. When the pots are removed, it is an easy matter to lift out the whole of the heating apparatus by means of the

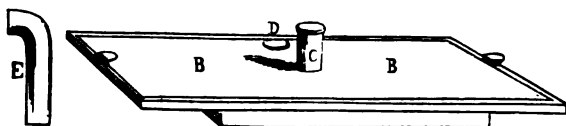


FIG. 1.

two handles attached to the zinc tray, and its appearance is that in figure 1. The upper tray B B, is an inch deep, and in this the sand, an inch deep, is evenly spread all over. Attached to it is the boiler A, which is in reality double, one portion enabling the hot air and smoke of the lamp to circulate

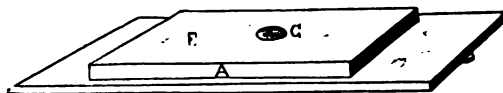


FIG. 2.

around the tank, and escape by means of the flue D, to which the funnel E is attached when in operation, the tank itself being filled by means of the vapor-tube C, on which a cap fits to prevent any excessive escape of steam. The boiler holds about two quarts of water. If we turn the tray upside-

down, we have the appearance presented in figure 2, where F is the boiler, and G the entrance to the hot-air chamber, into which the flame of the lamp enters when the case is at work.

"Replacing the tray, it will be seen that the hole in the boiler fits over the box which contains the lamp. The flame of the lamp plays upon the inside tank, and the smoke escapes by means of the flue G, which conducts it out through the back of the case, quite away from the plants. Practically speaking, there is very little smoke, and whatever soot forms inside the hot-air chamber flakes off and falls on the lamp, so that in these respects the case is self-acting, and cleanses itself. The exact measurements of these several parts are, in the case I am describing, as follows: Length of the tray B B, thirty-four inches and a half; breadth, seventeen inches. As the pots stand inside the tray and the latter fits the frame, there is therefore a working space for plants of five hundred and sixty square superficial inches. Depth of the boiler A, two inches. The entire case measures outside along the front, thirty-six inches and a half; from back to front, eighteen inches and a half. The price of this size and make is forty-eight shillings.

"When placed in a window or green-house, light is admitted only at the top, but the case might be made with lights at the back, to suit a low window, and additional light would be obtained. But as the chief use of the Waltonian Case is to raise seeds and strike cuttings, a partial admission of light is usually sufficient.

"In managing a Waltonian Case, it is important that the sand should be kept constantly moist, or the heat will not rise freely, but any excessive moisture may lead to damping off. It is a good plan to sprinkle a little silver-sand over the surface of the soil in pots containing cuttings, as this is a great safeguard against damping; it is also important to strike cuttings, and indeed to sow seeds in *small* pots for such a pit—the smaller the pots the greater the safety. Those which require the greatest amount of heat must be placed towards the centre, immediately over the lamp, to be succeeded by others as soon as they are sufficiently started to be moved towards the sides. I find it a good plan for lessening trouble to keep one side partially open, and the other quite close, and to keep a regular shift from the close to the open side, as the plants make root, and demand more air. The work of re-potting and hardening off is as simple as in any other form of tank-bed—the great point being to shift them before they get drawn through close confinement with bottom-heat. Watering must be regularly attended to, and the water must be of the same temperature as the air of the case. The pots may be removed for watering, and drained well before being returned to the case; though I use a fine rose, and water them as they stand, so as to irrigate the sand as well as the plants; and if the sand gets a little too moist, I get rid of it by a little extra ventilation.

"When set to work, it is really astonishing how much may be done with a Waltonian Case. It is a little plant factory, in which seeds and cuttings of all kinds may be started, and carried so far with the aid of bottom-heat, that they may be safely hardened off for the green-house or the window, or, during spring, for planting out in the garden. It has many advantages over a common hotbed. In the first place, we are certain of heat, and can regulate temperature from any degree up to nearly 90°; the ordinary temperature, with a partial admission of air and the lamp freshly trimmed, being 75° to 80°. It requires an experienced hand to make up a hotbed with dung that shall give a steady heat for any length of time, and

with the most experienced, accidents are not at all uncommon, such as damping off, burning up, failure of heat, and necessity for linings; but here we have simply to fill the boiler, and light the lamp, and then keep the case as close and damp as we please, or give air and light according to circumstances. Besides this, there is no soiling of the hands, no wetting of the feet, no anxiety about frosts and mats, and the most serious part of gardening economy is brought within reach of a lady's delicate fingers, and the merest beginner's unripe judgment. The limited size of the case may seem to militate against it somewhat; but though it is not intended for the commercial florist, who must strike cuttings by the thousand, it nevertheless will perform such an amount of work when well managed as to meet the wants of most amateurs who delight in a garden of limited dimensions, or who require the aid of close bottom-heat in connection with a green-house or conservatory. Geraniums, fuchsias, calceolarias, everything which comes from cuttings with bottom-heat, may be struck safely, and in quantities sufficient for all ordinary wants; the work of propagation being kept up during winter, and till the close of May, after which time most half-hardy plants may be propagated out of doors, without any artificial heat whatever. In other respects there is no difference in the management of seeds and cuttings in a Waltonian Case and in a common hotbed."—*Hibberd's Rustic Adornments, London.*

GRAPES AND GRAPE HOUSES.

BY JOHN B. EATON, BUFFALO, NEW YORK.

THE culture of the foreign grape under glass has become such a palpable reality, and on account of its easy accomplishment is of so much practical importance, that almost every one who has indulged in the pursuit conceives himself privileged to give his experience and opinions. This practice of course leads to good results, although it is sometimes a little difficult to reconcile the rather contradictory views and assertions of some, who, like myself, have had but little experience, and do not, in reality, know much about the matter.

There is one point, however, on which the grape-growing community are nearly unanimous; every one desires a *cheap* grapery, whether he wishes to erect a small and plain structure, or a large and ornamental one—conditions which are sometimes discovered to have been somewhat antagonistic.

The form of the house has been a subject of much discussion, and one upon which there exists a great diversity of opinion. Your correspondent, Mr. Saunders, I observe is inclined to take ground in favor of right-lined roofs, stating his belief in the doctrine that a curvilinear roof does not "in itself possess any important advantages," and that "the gain of more light and less opacity," which he is willing to admit, "is the only superiority which such houses possess."

For myself, I am strongly in favor of curvilinear houses, being satisfied, from my experience and observations, that they not only *do* possess "important advantages" over right-lined houses, but are not so much more expensive as Mr. Saunders seems to believe.

The first point which naturally occurs is the superior beauty of an arched roof, either for a lean-to or span-roofed house, which will hardly be contested. The next is the much greater amount of room obtained, both in the

length of the trellis, and in the house itself, it being quite unnecessary to build a front wall of five or six feet in height, in order to permit a near approach to the vines, without thrusting one's head into the foliage, or through the glass. The gain of one or two feet in length of rafter, with a given amount of ground surface, is certainly important, and in a large house, will afford room for a sufficient number of additional bunches to make a material difference in the weight of the crop.

If one wishes cheapness to control every other consideration, it is possible to grow very decent grapes at a very slight expense, in a roughly built house of boards, such as have been figured in some of your former volumes. Indeed, a friend of mine succeeded in obtaining some quite respectable Black Hamburgs from a vine which was only protected by a hot-bed frame, which had a sufficient quantity of glass broken out to afford ventilation. I question if this could be done however with *many* foreign varieties, —perhaps the Chasselas de Fontainebleau and some of its congeners might succeed.

My experience so far leads me to believe that I could attend two houses, planted with the two sorts above named *alone*, with the same amount of time, labor, and expense which it would be necessary to bestow upon *one* house (all of course being of equal size), planted in the usual manner, with a dozen or more varieties; consequently, were I growing for market, I should depend upon these two sorts almost, if not quite exclusively. Perhaps Wilmot's Black Hamburg and some still later sort might be admitted in order to keep up a succession.

While upon the subject I should like to be positively resolved whether there is a Royal Muscadine, which is distinct from and superior to the Chasselas de Fontainebleau?

It is contended by some that there is such a grape. Although I do not quite understand what are its distinctive and superior qualities, I suppose that there is little if any doubt, that what are usually sold for Chasselas de Fontainebleau, Golden Chasselas, and Royal Muscadine, (together with two or three other names,) are identically the same. In some instances they are propagated as one variety, and the different names affixed to please the taste of those who order them as such.

If some of your correspondents who possess the so-called "genuine" Royal Muscadine, will give an account of its peculiarities, and a sketch of its history, if possible, I have no doubt that it would tend to clear away some of the confusion which now seems to exist respecting it.

I am somewhat disappointed in the Black St. Peter's, although I acknowledge that I have scarcely given it a fair trial. It ripened last season under peculiarly adverse circumstances, (but to which most of the others were likewise subjected,) and was indubitably the most indifferent grape in my house. Perhaps, owing to the coolness of the season, and the late period of its ripening, it failed to acquire its proper flavor; and I hope that it will retrieve its character this year. If it proves no better than before, I shall be strongly tempted to cut down and graft my two fine plants, (now nearly of full size,) however barbarous it may appear. The Grizzly Frontignan pleases me much, and is a finer fruit than I anticipated. Its peculiar soft pinkish color is not so inviting as a deep black or rich amber, but desirable for its oddity, and in conjunction with its delightful flavor, by no means displeasing.

Does any one, I wonder, grow the Chasselas Musqué, without its crack-

ing? If it is done, I would like to be possessed of the method by which it can be accomplished, for I admit that it beats me. If it were not so exquisite in flavor, I would no longer be annoyed by it; but it is really worth some expenditure of time and temper to ripen it, even in a cracked state.

NOTES ON STRAWBERRIES.

BY H. A. MISH, HARRISBURG, PA.

THOUGH not a veteran, I am not exactly a novice in the culture of the strawberry, having paid considerable attention to it for several years, and with reasonable success—sufficient at least to satisfy me that it is pleasant and profitable. I have at present about fifty varieties under cultivation, some of which have not yet fruited, and brief as my experience has been, I have already thought it necessary to reject a number of varieties. My observations may not agree with those of others, but I give them for what they are worth, and intended to apply only to my own locality.

Albany Seedling. (Wilson.) Plants received from Mr. Wilson, the originator, last fall. They were so feeble that but about twenty-five grew out of two hundred, and those remaining are not in the most flourishing condition. The fruit is, with me, above medium in size, heart-shaped, dark-colored, and with a shining surface. Flesh, solid and juicy; flavor, excellent. Promises to be productive and valuable.

Buist's Prize. Good size; nearly round; color, light; flesh, rather soft; flavor, good; plant, a strong grower, and reasonably productive.

Globose Scarlet. (Prince.) Quite large, frequently $1\frac{1}{2}$ inches in diameter; of a bright light color; not—as its name would denote—globose; not so much so as Imperial Scarlet, from the same source; flesh, rather soft; flavor, good; plant, vigorous and very productive.

Hovey's Seedling needs no description; but with me it falls considerably below several others in flavor, productiveness, and average size.

Imperial Scarlet of Prince. In size, color, and texture of fruit, very similar to Imperial Scarlet; but different in form; flavor, good; plant, vigorous and productive.

Longworth's Prolific. Large, but not often more than an inch in diameter; flesh, firm and juicy; flavor, excellent; not so prolific as might be expected from the name, but sufficiently so to be valuable.

Myatt's Prolific Hautboys. Long-conical, rounding to both ends; of a dull, deep pink color, nearly white on one side; size, good, frequently an inch in length; very sweet, with a peculiar strong musky flavor, which might not be relished by such persons as object to the Seckel and Bartlett Pears, and there are some such. Notwithstanding the remark in Mr. Pardee's work, that it is prolific only in "runners," it is with me one of the most productive in fruit, and bears well, however much the plants are crowded. The fruit is borne upon tall stalks keeping it out of the reach of dirt.

McAvoy's Superior. Large, oval-conic, frequently more than an inch in diameter; sometimes irregular in form; flavor, good; productive.

Peabody. This much-praised variety has not come up to my expectations, though some of the berries are of fine size. I make some allowance, however, for the soil in which my plants are growing, and am in hopes a new plantation made this spring will do better. Flavor, very good.

Primate. (Prince.) Conical ; bright color ; medium size ; productive ; not at all equal to Mr. Prince's description.

Scott's Seedling. Long, of a regular conical form, quite pointed ; color, brilliant scarlet ; large, frequently $1\frac{1}{2}$ inches in length ; rather dry ; not very high, but well flavored ; productive.

Scarlet Magnate. (Prince.) Very large, frequently $1\frac{1}{2}$ and more inches in diameter ; form, peculiar, being compressed from the calyx to apex ; color, dark scarlet, with lighter shade on unexposed side ; flesh, remarkably solid and heavy ; flavor, fine ; very productive.

Trollope's Victoria. Very large, frequently $1\frac{1}{2}$ inches in diameter ; round-heart shaped ; color, brick-red, shining ; flesh, solid, juicy, and flavor excellent ; not very productive.

Triomphe de Gand. Very large, about equal to Trollope's Victoria, which it resembles in color, general appearance, flavor, and productiveness, but not in form, being generally compressed at the sides, or of a cock's-comb form.

Walker's Seedling. Medium size ; heart-shaped ; color, very dark ; flesh of a rich red color, firm, juicy, and of a delicious flavor, though slightly acid ; a good bearer.

Read's No. 1. Plants set out this spring. The few berries produced were of good size, of a broad-conical form, very dark color ; flavor, sprightly and excellent ; promises to be productive and valuable.

Young's Germantown, *Read's Black Pine*, and a number of other new varieties have not been sufficiently tested for me to express an opinion.

The Foreign varieties which I have tried, and which were procured from an English nurseryman of high reputation, have generally failed with me. Ajax, Admiral Dundas, Goliath, Hooper's Seedling, Compté de Paris, and Ruby, are all injured in the foliage by the sun ; and Sir Harry, which sold two years ago at six dollars for a dozen plants, is absolutely worthless. Possibly some of them may do better after being fully naturalized.

As the result of my limited experience, I place Scarlet Magnate at the head of the list for the average of all qualities necessary to constitute a good strawberry. I have not had specimens of it yet to equal the six-inch-in-circumference berries of Hovey's Seedling or the seven-inch Peabodys which "we read about," but never see. I am confident, however, that if ever Hovey or Peabody have attained these sizes, the Magnate may with proper culture be brought to equal size. One great peculiarity of this berry is its solidity and weight ; another, is the uniformity of its size. While it has not yet produced any six-inch berries, it is difficult to find many less than three inches in circumference.

THE GREAT ENGLISH ROSE EXHIBITION.

THE (London) National Rose Exhibition, at the close of July last, was a success. The *Gardeners' Chronicle* says : "Half the nurseries in England poured their treasures into St. James's Hall, and all their value could be judged of in an hour. It may indeed remain doubtful whether General Jacqueminot takes precedence of Lord Raglan and the Giant of Battles, or Joan of Ark of Madame Vidot, or Madame Vidot of Auguste Mie, or Madame Hector Jacquin of Coup de'Hébé ; but nobody can doubt that their glorious forms constitute present perfection, as the Panachée d'Orleans, a faded

painted beauty, and the vulgar Village Maid are the reverse. This, too, was shown, that two-thirds of the varieties still in cultivation may be now consigned to the limbo of oblivion, to the equal profit of both buyer and seller.

"Three tables running the entire length of the body of the building were covered with boxfuls of Roses of every hue, both in the shape of single blooms and of exhibitions of three trusses of each variety. Encircling the raised platform at the end of the hall in front of the great organ was a grand display of blooms, from Mr. Rivers, of Sawbridgeworth. These were, however, contributed merely for the decoration of the place, and therefore were not shown in competition with others. Among them were some of the finest varieties now in cultivation, and their numbers (they occupied some 20 boxes) served to show what kind of treat a visit to Sawbridgeworth at the present time would afford.

"As regards prizes for the best collection, three trusses of each variety, a silver cup, value ten guineas, was awarded to Mr. Paul, of Cheshunt, and a second cup of five guineas to Mr. Cranston, of Hereford. For collections of one truss of each variety, a five guinea cup was given to Mr. Francis, of Hertford, and a second prize in the same class was awarded to Mr. Cant, of Colchester. For forty-eight distinct varieties in single trusses, Messrs. Paul had a first prize, and Mr. Turner, of the Royal Nursery, Slough, a second. For twenty-four, in single trusses, a first prize was awarded to Mr. Cranston, and a second to Mr. Cant. Other prizes were awarded to Messrs. Paul, Hollamby, and Francis.

"In the Class of Amateurs who regularly employ a gardener, prizes were also awarded, as well as to amateurs not regularly employing a gardener.

"In these collections we observed charming trusses of the following varieties, viz., **HYBRID PERPETUALS**:—*Souvenir de la Reine d'Angleterre*, *Madame Vidot*, *Duchess of Norfolk*, *Madame Heraud*, *Ravel*, *Madame Hector Jacquin*, *Victor Trouillard*, *La Ville de St. Denis*, *Madame Masson*, *Duchesse d'Orleans*, *Comte de Nanteuil*, *Cardinal Patrizzi*, *Madame Place*, *Arthur de Sansal*, *Lady Stuart*, *Gloire de Vitry*, *Queen Victoria*, *Madame Knorr*, *Ornement des Jardins*, *General Simpson*, *General Castellane*, *Jacques Lafitte*, *Gloire de Parthenay*, *Panachée d'Orleans*, *Madame de Cambacères*, *Prince Leon*, *Amandine*, *Géant des Batailles*, *Mathurin Regnier*, *Lord Raglan*, *Caroline de Sansal*, *William Griffith*, *Noëmi*, *Jules Margottin*, *Madame Rivers*, *Louis Odier*, *Glory of France*, *Triomphe de l'Exposition*, *Louis Peyronny*, *Alexandrine Bachmeteff*, *Helen*, *Auguste Mie*, *Baronne Prevost*, *Louise Magnan*, *Sydonie*, *Lion des Combats*, *La Reine*, *General Pelissier*, *General Jacqueminot*, and *Joan of Arc*. **GALLICA**:—*Transon Goubault*, *Cynthia*, *Boule de Nanteuil*, *Colonel Coombes*, *Columella*, *Duchess of Buccleugh*, *Latour d'Auvergne*, *Louis Philippe*, *Prince Regent*, *Daubenton*, *Gloire de Colmar*, *Melanie*, *William Tell*, *Dido*, *Surpasse Tout*, *Letitia*, *D'Aguesseau*, *Ohl*, *Reine des Français*, *Kean*. **BOURBON**:—*Acidalie*, *Souvenir de Malmaison*, *Coupe d'Hébé*. **HYBRID CHINA**:—*Brennus*, *Gloire de Couline*, *Chenedolé*, *Victor Hugo*, *Madeleine*, *Paul Perras*, *Comtesse Lacépède*, *Madame Rameau*. **TEA**:—*Nephetos*, *Souvenir d'un Ami*, *Narcisse*, *Gloire de Dijon*, *Madame Willermoz*, *Bougère*, *Devoniensis*.

"It may be interesting to know that in some forty different collections from as many exhibitors, blooms of the following varieties occurred in nearly every one of them, viz.: *Jules Margottin*, *Gen. Jacqueminot*, *Madame Cambacères*, *Caroline de Sansal*, *Madame Domage*, *Gloire de Dijon*, *Paul Perras*,

Prince Leon, Gen. Castellane, Paul Ricaut, Lord Raglan, Madame Vidot, Auguste Mie, Gen. Brea, and Baronne Prevost. It may therefore be taken for granted that these are the most popular kinds.

"The number of times the following blooms appeared in the different exhibitions, of which, as has been stated, there were about 40, is as follows:—Robin Hood, 5 times; Triomphe de Paris, 7; Dr. Marx, 6; Lady Alice Peel, 3; Mrs. Elliott, 8; Pius the Ninth, 10; Comte Bobrinsky, 5; Standard of Marengo, 1; Brennus, 3; Dupetit Thouars, 6; Devoniensis, 9; Niphetos, 4; Solfaterre, 6; and Safranot, 8 times.

"The following list contains some of the very finest varieties selected from the whole exhibition. **BLUSH**:—Madame Vidot, Madame Rivers, Duchess of Orleans, Auguste Mie, (deep blush), Madame Phelip, Caroline de Sansal, and Mathurin Regnier. **SCARLET OR DARK CRIMSON**:—Lord Raglan, Gen. Jacqueminot, Alexandrine Bachmeteff, Le Lion des Combats, General Castellane, Prince Leon, Gloire de France, Paul Ricaut, and Sir J. Franklin. **ROSE**:—Colonel Rougemont (very like Baronne Prevost, and quite as large,) General Brea, Madame Hector Jacquin, Jules Margottin, William Griffiths (round and full as a Ranunculus), Madame Laffay, Gloire de Vitry, Prince Imperial, La Ville de St. Denis, Coupe d'Hébé, Le Reine, and Paul Perras. **YELLOW**s:—Cloth of Gold, some fine blooms of which were exhibited greatly superior to those of Miss Gray, Vicomtesse Decazes, Persian Yellow, and Old Double Yellow. Of **WHITES** none are very good. The best are Dr. Henon, Louise Magnan, and Beauté de Melan. **STRIPES** were not good. Among them we noticed Panachée d'Orleans, Cillet Parfait, and Perles des Panachées. Among **Moss Roses** we have little to recommend. What were shown as new were not in good condition. Of **AUTUMNAL** ones Salet and Madame Ory seemed the best.

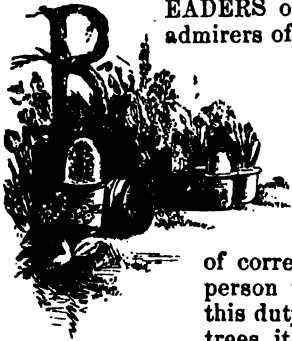
"Of **Roses** in vases and baskets there were three or four exhibitions. That to which the prize was awarded came from Mr. Turner, of Slough. It consisted of a vase some two feet in diameter, on which was reared a pyramid of **Roses** nearly four feet in height. The blooms were all fixed in wire-work, in the interior of which were pans of water, in which their stalks were placed to keep them fresh. The blooms were well arranged as to color, and though a little too formal in appearance, it was nevertheless striking and effective. Another large device with an angular base terminating in a pyramid was not so much admired.

"It will be gratifying to know that during the day upwards of £100 were taken at the doors. Such encouragement, we hope, will enable the promoters of this in every respect highly successful exhibition to hold another 'Court of Roses' next year."



DOWNING'S LANDSCAPE GARDENING.

A LETTER FROM MR. DOWNING.



READERS of the *Horticulturist*, and especially the numerous admirers of Mr. Downing, must have rejoiced to see an advertisement in the late numbers, announcing a new edition, under the auspices of his friend and literary executor, Henry W. Sargent, Esq., of Wodenethe. No other person that we know in this union, is so well qualified for the task of bringing the work up to the present day. It must afford pleasure to all lovers of rural art, that Mr. Sargent has consented thus to aid the dissemination of correct taste, and we feel very sure that to no other person would Mr. Downing have so willingly consigned this duty of respect and love. In the enumeration of new trees it will be complete, and in each department the notes of our friend will add much to the value of the publication. It will not be issued before next spring.

Mr. Sargent requests, in the advertisement, that our readers will afford him any information they may possess respecting the character or hardihood of any of the newer evergreen or deciduous trees, which have been introduced into cultivation within the past ten years, as he is desirous of comparing the varied success of the same tree in the different portions of the United States. All who have this kind of information, will of course, most cheerfully contribute their portion to so desirable a comparison.

Some time since, we published a few "Familiar Letters," from Mr. Downing which had been preserved in a file we chanced to be looking over. They exhibited the *man* in his private character, when not dressed up, if one may use the expression, in his party apparel. They were simple expositions of the excellence of his head and heart—mere commonplaces between one friend and another—and yet they met with a response in every quarter, and correspondents frequently ask for more. In the following, which we have but just discovered, Mr. Downing speaks gracefully and modestly of his professional engagements, and numerous calls on his time; there is no affectation of great success—he is preparing descriptive lists of fruit for the catalogue of the nursery, "which cost me a great deal of labor,"—is grateful for a few criticisms—rejoices calmly that some of "my castles in air" will soon be brought into palpable form, and recapitulates with pride Miss Sedgwick's plan of advertising her copy to lend. "I wish," he says so naturally, and so beautifully, "the little volume were perfect, to deserve the friends it has made."

This letter was written almost five years before the commencement of the *Horticulturist*, when his fame was less extensively disseminated than afterwards, and when he was just beginning to feel his own powers; he was then engaged in the nursery business, which was soon abandoned for the pen; a happy combination of early practical knowledge, with aspirations after the true and beautiful, which so eminently made their mark upon the public taste, as for long periods to constitute an era of even historical interest.

"We never tire of hearing about Downing," writes the most agreeable of lady correspondents from the west; "pray tell us all that can be known." We can do this in no better mode than to let him speak for himself, and in presenting the following previously unpublished letter, we believe we are occupying a little space advantageously and agreeably. We will only add that if any of our readers possess relics of the kind, it will confer a public favor if they will consign copies to our hands.

Newburgh, 21st Oct., 1842.

J. JAY SMITH, ESQ., PHILADELPHIA, PENN.

MY DEAR FRIEND :—I have just returned from Boston, after a considerable absence from home, this morning; and your letter strikes with such an iron tongue upon my heart, that I sit down at once to reply to it. I assure you my silence has been as unwished for on my part, as it could possibly have been on yours. But I have never had so absorbing a season as I have since you left me—having been thoroughly driven with business matters—persons occupying my time here, or landscape gardening journeys abroad, constantly; and whenever I have had time to write, I have been driven to write numberless professional letters, always awaiting me when I come home; and putting off those two or three correspondents *nearer my heart*, because I felt that they could pardon my temporary silence. And I have many times reproached myself that I have not before answered the very kind letters and notices from you and others which I have found awaiting me at different times.

I have been lately employed at the state lunatic asylum at Utica, a magnificent new establishment, to design the grounds—at private places at Boston, Albany, New Haven, Long Island, Staten Island, two places in New Jersey, &c., so that you see my art is flourishing.

I am now home for the season, our busy autumnal trade now commencing. Besides this, a good deal of the time I could catch has been employed in preparing the *descriptive* lists of fruit in our new *catalogue*, which cost me a great deal of labor, and which I am sure will be found valuable by all interested in fruit.

I have your unanswered letters all before me, and am greatly obliged to you for the kind opinion you have formed of my "Cottages." The *criticisms* I have also noted for use, in a new edition, with improvements, which I trust may come before a long while, as the work has been very favorably received. Some of my "castles in air" I have the satisfaction of knowing will be soon brought into palpable form by amateurs in different parts of the country. No. 2 is an especial favorite, and I have just now a letter from a gentleman unknown to me, at Charleston, who writes to know where, and at what price he can buy a place of a few acres, on the North river, to build this cottage upon! My friend, Miss Sedgwick, has written me a letter, in which she enters heartily into our feeling of the subject, and says she means to advertise her copy *to lend*, in the Stockbridge paper, to any of the farmers. I wish the little volume were perfect, to deserve the friends it has made; but I shall be gratified if it does its part towards rousing our good people in matters of architectural taste. The booksellers all say that now something of a more simple character is wanted, on farm buildings, &c.

I hope your health, which I hear has been so poor, is now well recovered. It would have given Mrs. D. and myself great pleasure to have been with you again in September, but we could not achieve it, as my engagements

and the guests she was receiving at home, put it out of our power, unfortunately. I especially wanted to send something to your horticultural fair, but was detained in the North a day or two too late; next season I must try to do better, and be more systematic in my arrangements.

Some few things you want we have not for sale, as the *Virgilia lutea*, but I will make it up in other things, and will take care of you in due time.

I see there is to be a plate of *Ashland* in a popular life of Clay, in press; perhaps it will furnish something for my use in the edition of the L. G. for which I am preparing new *material* for this winter; and in which task I shall at all times be most truly glad to have hints from you.

Mrs. Downing begs me to present her kindest remembrances to you, and we both join in kind regards. Next summer we hope — will join you in a visit to the Hudson Highlands, and you shall be made more thoroughly familiar with the merits of the North river than you were this season.

I was also in debt to our friend Mr. Notman, who wrote me a very kind letter, which I will soon answer *in extenso*. We have a great acquisition in Mr. Upjohn, the architect of Trinity Church, N. Y., (which is really growing more exquisite every day,) a church which will stand as far before all other Gothic structures of the kind in this country, as a Raphael's Madonna before a tolerable sign painting. Mr. U. has in progress also, some noble and artistic alterations or improvements on the old *manor house* of the Van Rensselaers, at Albany, which I have inspected, and like greatly. You may judge of the effect of the whole, when I tell you that these alterations alone cost \$30,000, and this on a house nearly 90 years old. Still very fine. The hall 50 by 25 feet.

I can now promise to answer you more faithfully, so pray overlook my apparent neglect with your accustomed generosity, and write soon to yours, very sincerely,

A. J. DOWNING.

GEORGIA: ITS CAPABILITIES AS A FRUIT-GROWING STATE, &c.

IN looking forward to the future of our great cities, the mind must revert occasionally to the propitious climate of the Southern States, and to them as the means of supply. Every information that we can obtain on the subject should be studied; we present the following extracts from a private letter as curious and instructive:

"MY DEAR SIR,—The climate is so genial, so suited to my constitution and habits, that I could no more be prevailed to live in the *sour, bitter* north. Balsamic air by day, balsamic and a little refreshing at night; but always *bracing*. A man can live here outdoors every hour of the day and night, as in sweet Italy: barring the fleas, and dust, and bald mountains of that paradise peopled by demons.

"How would you enjoy a ride at six miles an hour for three or four hours, from twelve to three P.M.? and that under a temperature (as usual) of between eighty and ninety, or ninety-four degrees! Well, I can frankly tell you that I *do enjoy it*, and that it is less hot and oppressive than seventy-five degrees in the North. Were it not so, the South would not be inhabited. Those who talk about the South know only such dens—unfit for men—as Savannah, Charleston, and New Orleans. Live in the open, broad, plateaux, and you will experience my sensations. The fact is, I have been out at least fourteen hours if not sixteen every day, and have not been

incommoded by the sun. The only thing I complain about is, too much fine weather, too many cloudless days, and too much of the most luscious fruit of the world ; always melons, peaches, apples, plums, nectarines, blackberries ; you can scarcely refrain from eating too much ; but still it never hurts me. Six or eight melons a day, and a basket of choice fruit, is just what I want, and am used to. We have here plenty of nice berries, wild plums, (chickasaw,) wild cherries, (over sweet,) blackberries of the finest quality, &c., in the woods, besides, a perfect multitude of the finest flowers in succession. What a *wonder* of creation is that Lagerstroemia, blossoming nearly six weeks, and the most graceful tree (bearing when a little shrub), that can be seen ! and the Mimosa, and the Pride of China, and the wild blue Glycina ! Trumpet vines are a drug ; they are everywhere. It would take me a sheet to enumerate the *garden flowers* scattered all over the fields and edges of woods, and in the woods. I know that Canada is highly civilized, (horticulturally speaking,) but—what pains to be taken ! No, it would not pay ! Here we take all from the lavish hand of nature. People don't know the South !"

We hope to hear more from our enthusiastic correspondent.

"FOR MARKET PURPOSES."

Your excellent remarks on this subject remind me of another common fault with Horticultural writers and speakers, though not by any means confined to them. I mean, omitting to tell the whole truth. A single instance will illustrate my meaning, though many others might be given. "Cahoon's Seedling Rhubarb" has been written up in the papers, and talked up before that very humorous association in New York City, called the "Farmers' Club," on account of its great size, but they fail to tell you that it is utterly worthless for "market purposes" or home consumption, from the fact that it is so late ; one is tired of pie plant before "Cahoon" is large enough to use, and that after it has attained size it is coarse grained, without flavor, and inferior in every way to "Linnæus" or "Victoria." It belongs to that numerous family annually distributed through the country for the especial benefit of the "Sparrowgrass" and "Beach Tree" people. I would advise "Beach Tree" in his next experiment to use such manures only as are manufactured expressly for his class, such as "———'s Improved Super-Phosphate of Lime"—he will run no risk of killing his trees, nor anything else, with them—they are very harmless.

I wish to add my testimony to that already published in favor of "Wilson's Seedling Strawberry," both for "market purposes" and for family use. It is very productive, of handsome color, perfect form, good quality, of larger average size than "Hovey's Seedling," and bears transportation well. We have picked three pints from a single plant, (a pint each time at three different pickings,) and nearly one hundred quarts from one hundred and fifty plants—ten times more than Hovey gave us.

I cannot agree with a Philadelphia correspondent of the *Country Gentleman*, in condemning Peabody's Seedling. It has done well with me, and though not as large as the picture, is fully equal to the renowned Hovey in size, quantity and quality, and superior to it in vigor and uniformity of growth.

FITZ RANDOLPH.

IMPLEMENTS CONNECTED WITH THE GARDEN AND THE HOUSE.

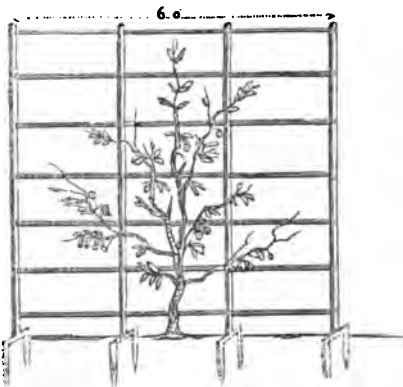
EXHIBITED AT THE ROYAL AGRICULTURAL SOCIETY'S SHOW, ENGLAND.

BESIDES most of the usual implements serviceable to the gardener, Messrs. Cottam and Hallen, 2 Winsley Street, Oxford Street, exhibited the following :

Footpath or Accommodation Gate and Curve.—These are united and fixed in a line with strained wire, hurdle, or continued fencing, and are remarkably neat and convenient for admitting, whilst separating, from one part of the grounds to the other.



Espalier Hurdles.—These are also very neat, and we need do no more than remark upon their durability compared with similar structures of wood. They are neatest in appearance when painted a greenish gray, so as to be least distinguishable from the branches of the tree.



Wrought-Iron Tree Guard.—Where sheep or other grazing animals are admitted upon grass within view of the house, and trees are planted in the pasture or lawn, no guard is either so ornamental or effectual as this.—*London Cottage Gardener.*

DO WE CARE FOR GRAPE VINES TOO MUCH?

BY GEO. W. CAMPBELL, DELAWARE, OHIO.

I NOTICE in a late number of the *Horticulturist*, some remarks from a correspondent, whose argument seems to be, that to have fine grapes we should *not* deeply trench and enrich the ground; the vines should *not* be pruned, and finally the grass and weeds *should be* left to grow undisturbed! Examples are also given where this course has been eminently successful, while the carefully pruned and cultivated vines have proved nearly worthless.

I have been, Mr Editor, a cultivator and admirer of the Grape—principally in an amateur way—for about twenty years, and have also had some opportunities for observation; but I must say the above doctrine is directly opposed to my whole experience.

I have never yet been troubled with rot, or mildew—but whether this is owing to a fortunate locality, or to some favorable atmospheric influence; or whether it is fairly attributable to my mode of treatment, I will not confidently assert. But I have seen many vines grown with a degree of neglect which I think ought to make not only knives and hoes, but even their owners “blush,” which produced no well-ripened fruit, and which suffered from both mildew and rot, in the same vicinity where my own grapes ripened perfectly.

In regard to pruning, I have never seen vines do well for any length of time, treated upon the closely cut spur system; and would sooner employ a man to prune my vines who had never before seen a grape vine, than trust them to the tender mercies of an opinionated German, who had dressed vineyards all his former life in Germany. For our native vines, I think the true system lies between the excessive pruning of the foreigner, and the total neglect advocated by your correspondent; and that any vine was ever injured in fruit-bearing or health by judicious pruning and cultivation, I cannot believe. Vines are often neglected in the early part of the season, until a wilderness of young growth, and a great deal more fruit than can be properly matured is the consequence. Then the tyro, to make up for former neglect, “pitches in,” knife in hand, and prunes with a vengeance—cutting out a large portion of the newly-formed wood and leaves, but carefully leaving all the fruit. In the fall, he wonders that many of his grapes are still green, when they should be ripe; part are rotten, and none of them have flavor or aroma. He wonders, too, that the following year his vines are feeble and unhealthy; and sighs for the wild Fox grapes he remembers to have eaten in his boyhood, and wishes he could still find the same fragrant variety that left his youthful appetite nothing further to desire!

A grape vine should be treated as Isaac Walton handled his fish, “tenderly, as though you loved” it. It should receive frequent and careful attention, and be so pruned as never to require a wholesale slashing to keep it within reasonable bounds. I prune my vines upon what is called the long cane, or renewal system, and feel confident it is the best. I train up, during the growing season, strong new canes, between the fruit-bearing branches, pinching off the laterals and tendrils their whole length. The wood that bears fruit the present year, I prune out in the fall, usually in November, and shorten the new canes to the length I wish them to occupy the next season. The following spring, each bud on the new canes will usually produce a lateral branch showing from two to four bunches of fruit. As soon as the bloom is past, I cut out, except in rare instances, all except one

bunch, leaving the finest on each lateral, shortening them in at the distance of four to six leaves beyond the bunch. I look over the vines afterwards, every week or ten days, and where these laterals again start, I pinch them off. I commenced at the top of the vine, and work downward ; as checking the growth above throws the sap into the lower branches, which are always most feeble. In the meantime, I train up strong, healthy canes in the position of the fruit-bearing branches of last year for next season's fruit. This course has always given me satisfaction, and is simple, and easily understood.

As to soil, I believe a limestone soil to be the best, and where the soil does not contain lime naturally, it should be liberally supplied. The finest growth I have ever seen has been made by vines planted beside new stone walls, where considerable quantities of lime and sand had fallen in process of building.

DR. ROBERT BROWN, D.C.L., F.R.S.,

FOREIGN MEMBER OF THE ACADEMY OF SCIENCES OF THE INSTITUTE OF FRANCE.

LAST week it was our melancholy duty to announce the decease of one who throughout the long period of nearly half a century has been universally recognized as the first of living botanists ; one, moreover, who has proved himself to be second to Linnæus alone of all his predecessors in that department of science. We should be wanting both in respect to the memory of Robert Brown, and in our duty if we neglected to record the principle events of his scientific career, and to add our tribute of regret at the passing away from amongst us of a man for whose talents and labors we ever entertained the most profound esteem.

To some who have worked as his contemporaries in the great metropolis of science, and to whom his name is no less familiar from its constant recurrence in every botanical work in this century, than from the habitual deference with which it is pronounced by the scientific men of every country, it may seem strange that we should think it necessary to dwell upon some of those features of his history which should be best and most widely known ; but, owing partly to the length of time that has elapsed since his great discoveries were made, partly to the quiet and unostentatious manner in which they were announced, partly to the brevity of his style, and the comparatively small bulk of his published works, and most of all to his singularly retiring and unobtrusive disposition, it so happens that many of our intelligent readers, especially among young gardeners, are quite unaware of the real extent and merits of Robert Brown's labors, and of the vast indirect influence they have had upon their own pursuits. Nor are they singular in the want of information ; the general ignorance of the educated classes in England of the very existence of their late countryman had become a reproach to us amongst the scientific men of the continent, who boast that his name stands at the head of the list of honorary fellows of more scientific academies than that of any other individual whatever, not even excepting Humboldt ; and that an Emperor, on hearing of his arrival at one of the capitals of Europe, placed a carriage at his disposal : whereas when his name was announced in the British Parliament as the recipient of a pension, information was demanded as to who was Robert Brown ; and that on the occasion of his receiving the degree of Doctorship of Laws at one of the English universities, his

name was greeted with a laugh and a jeer from the assembled *alumni*. Such taunts are current on the continent, and whether strictly true or not, are sufficiently suggestive, and to some extent merited; the time has however passed, when science was regarded as an inferior department of human knowledge, and time will eventually show that no one has really done more to raise it to a dignified position than this distinguished botanist, though his personal influence in this respect was during his lifetime scarcely felt by the public at large.

Dr. Robert Brown, or Mr. Brown as he preferred being addressed, was born December 21, 1773, at Montrose, where his father was a non-juring clergyman, of the Scottish Episcopal Church. He was educated at the Montrose Grammar School, where he was a schoolfellow of Joseph Hume. He afterwards studied medicine first at Marischal College, Aberdeen, and subsequently at Edinburgh, where his love of botany was fully developed.

Having taken his diploma, he was appointed surgeon and ensign to a regiment of Scotch Fencibles stationed in the north of Ireland, where he pursued his botanical studies with great ardor, and formed a friendship with an equally enthusiastic botanist, the late Captain Dugald Carmichael, then serving in the same country. At this period Mr. Brown became known to Sir Joseph Banks, we believe through the discovery of a rare and curious Moss, the *Glyphomitrium Daviesii*, and a friendship was thus commenced between these eminent men which only terminated with death, and which has materially influenced the progress of botanical science in England.

At the close of the last century the Admiralty were induced to fit an expedition for the survey and exploration of the coast of Australia, and Mr. Brown was selected by Sir Joseph Banks to accompany its commander, Com. Matthew Flinders, R. N., as Naturalist in H.M.S. Investigator. Mr. Brown was accompanied by Ferdinand Bauer as botanical draughtsman, and by Mr. Good as gardener; and the expedition further included as landscape painter the late eminent artist Wm. Westall, and among the midshipmen Sir John Franklin, with whom Mr. Brown formed a most intimate friendship. The Investigator sailed in 1801; and after touching at Madeira and the Cape of Good Hope, arrived in the following year at King George's Sound, on the south-west coast of Australia. During the three weeks devoted to the survey of that harbor, Mr. Brown collected no fewer than 500 species of plants, the great majority of which were entirely new to science; the flora of that quarter of Australia being more peculiar and local than that of any other part of the globe. After botanizing at various other points along the south coast, Mr. Brown landed at Port Jackson, and remained there several weeks.

In July, 1802, the northern survey was commenced at Sandy Bay, in lat. 25°, and continued along the northeastern and northern shores of Australia and the Gulph of Carpentaria, to the Pelew and Wellesley's Islands, (where the *Livistonia australis* was discovered), and then to Wessel's Islands, long. 136° E. Here the rotten state of the Investigator's timbers, the ill health of her commander, and the appearance of scurvy amongst the crew, rendered it necessary to bear up to Timor, where they obtained provisions. Thence they steered along the west and south coasts of Australia, passed a second time through Bass's Straits, and arrived at Port Jackson on June 9, 1803, having lost many of their crew by dysentery, including Peter Good the gardener, after whom the well-known greenhouse Leguminous genus *Goodia* was afterwards named by Mr. Brown.

At Port Jackson the Investigator was condemned as unfit for service, and Capt. Flinders sailed for England in a hired vessel, Messrs. Brown, Bauer and Allen remaining behind, with the intention of exploring the colony for eighteen months, at the end of which period Capt. Flinders hoped to rejoin them in another ship for the prosecution of the survey. On her homeward passage, however, the Porpoise was wrecked in Torres' Straits; Flinders with a few companions, escaping in an open boat, and, tracking the coast, reached Port Jackson in safety, where he obtained a small schooner, with which he returned and rescued the remainder of the crew. He then proceeded by way of Timor and the Mauritius, where the leaky condition of his craft obliging him to put into Port Louis, his vessel was treacherously seized by the French governor, who detained Capt. Flinders partly in prison and partly on parol, from December, 1803, till June, 1810.

Meanwhile Mr. Brown and his companions diligently explored the botany of the Blue Mountains and other distant parts of the New South Wales settlement, and visited the islands in Bass's Straits, and also Tasmania, where they made extensive collections, residing at Risdon, on the river Derwent, for several months, including the period of the foundation of the town of Hobarton.

In consequence of the non-arrival of Capt. Flinders at the time fixed by him for his return to Australia, the naturalists took advantage of an opportunity for returning to England, where they arrived in October, 1805. Most of the collections and drawings reached England in safety, though an extensive suite of duplicates of the south coast plants perished in the wreck of the Porpoise, together with all the living plants obtained during the survey.

On Mr. Brown's return he was directed by the Board of Admiralty to publish the botanical results of the voyage; of these one portion appeared in the *Prodromus Floræ Novæ Hollandiæ*, and another in the appendix to the narrative of Capt. Flinders' voyage, published in 1814. Soon after his return he succeeded Dr. Dryander as librarian to Sir Joseph Banks, and he also received the appointment of librarian to the Linnæan Society of London, in which capacity he read before that Society a series of most profound and original botanical papers, to which we shall hereafter allude.

On the death of Sir Joseph Banks in 1823, Mr. Brown became, by his will, the possessor of the Banksian herbarium for his life (after which it was to pass to the British Museum), together with the remainder of the lease of Sir Joseph Banks' house in Soho Square, which had become the centre of London Scientific Society. The herbarium Mr. Brown at once offered to the British Museum, on condition that he should be appointed keeper of the Botanical Department with a suitable salary, which offer was accepted. He, however, continued until his death to occupy that portion of the house in Soho Square which looked into Dean Street, the remaining portion being let by him to the Linnæan Society until the expiry of the lease, soon after which the Society removed to Burlington House, where apartments were assigned to it by the Government, as also to the Royal and Chemical Societies.

At the British Museum the Banksian collection formed the most valuable part of the national herbarium, over which Mr. Brown presided until his death.

For several years Mr. Brown held the office of President of the Linnæan Society; this he resigned in 1853, since which time he has ceased to take an active part in scientific pursuits or societies; but his interest in the progress of every department, and especially in the Linnæan and Royal Societies,

continued unabated to the last ; and his wonderful and almost unique powers of mind, his memory and his sagacity, remained wholly unimpaired till the very day of his decease. In the spring of this year he was attacked with bronchitis, from which he recovered, but which left him for some weeks in a very enfeebled state. Dropsy and loss of appetite supervened, under which he gradually sunk ; suffering little pain, perfectly conscious of his condition, and retaining to the end his singularly placid demeanor, his affectionate interest in all who were dear to him, and a most tranquil and peaceful frame of mind.

In a future number we shall endeavor to give some slight account of his labors and writings, and of their influence on the progress of botany.—*Gardeners' Chronicle*.

SMOOTH-LEAVED BUMELIA, OR IRON WOOD.*

A SMALL and rather elegant tree, from twelve to forty feet high, chiefly an inhabitant of low wet forests, from Carolina to Florida, and in Louisiana, not far from the banks of the Mississippi ; but it is never met with in Canada, as stated by Willdenow in the "Species Plantarum." It was first introduced into France from the Mississippi by the French Canadians, under the name of the Milk-wood of the Mississippi, from the fact that the young branches, when cut, yield a milky juice. The wood, according to Elliott, though not used by mechanics, is extremely hard, heavy, and irregularly grained, agreeing in this respect pretty nearly with the species of *Sideroxylon* of the West Indies, deriving their name from the hardness of their wood, which is compared to iron. One of the tropical species has wood nearly of the same yellow color and close grain as that of the box tree.

The younger infertile branches generally produce axillary spines, which often increase in size with the advancing growth of the wood. The bark of the trunk is gray and smooth, at length cloven into narrow longitudinal chinks ; that of the branches is brownish gray and smooth. The leaves, at first somewhat silky—pubescent and whitish beneath, are rather narrow and lanceolate, somewhat obtuse, smooth and reticulated above, attenuated below into a moderate and slender petiole, brought together usually in lateral clusters ; in the centre of which, surrounded by the round clusters of flowers, issues occasionally a spine. The leaves, at length smooth, are about three inches long including the petiole, and an inch or less in width.

The flowers, small and greenish, are in axillary or lateral rounded clusters ; the peduncles simple, all of a length, and, as well as the calyx, quite smooth. The stamens are five in number, and about the length of the corolla. The leaves on the infertile branches are more decidedly lanceolate than the rest. The berries are oval, juicy, black when ripe, and about the size of small peas. A tree now in Bartram's Botanic Garden, at Kingessing, in rather an unfavorable shady situation, probably forty years old or more, has attained the height of about forty feet, but, being slender, is not more than eight inches in diameter ; it appears, however, as though it might attain a still larger growth, and is perfectly hardy in this climate.

* See Frontispiece.

PEAR AND GRAPE CULTURE.

BY A. HUIDEKOPER, MEADVILLE, PENN.

THE emphatic negative given by Mr. Allen, in the May number of the *Horticulturist*, to the question, "Can Pears be profitably grown for the market," has brought out by way of reply, equally ardent articles in the affirmative from those who have been more successful. I trust Mr. Allen's impulsive and enthusiastic way of presenting any cause which he adopts, will not subject him to the fate of the French editor, who, for his remarks upon the manners of the military, was compelled to accept challenges to fight one hundred lieutenants, *seriatim*, provided he survived the onslaught of the first ninety-nine.

Local reasons may be assigned for Mr. Allen's failure, but the same local reasons prevail pretty extensively elsewhere, and Mr. Allen with his misfortunes will be regarded by a considerable class of pomologists as a *representative* man. That upon sundry belts and strips of territory in the State of New York, where the heat and cold of the respective seasons are modified by the proximity of large bodies of water, that about Boston and Rochester, and within circumscribed limits elsewhere, the Pear under favorable features in the climate, and friendly aliments in the soil, can be grown with great success is undoubtedly true, and that the delicious character of the fruit there grown justifies all the enthusiasm exhibited by the producers is equally true. But is also certain that a large, *very* large proportion of all the pear trees set out north of 31° 30' perish in the course of eight or ten years after planting.

Nurserymen and planters may criminate and recriminate each other, but the great difficulty, I apprehend, will be found to be in the severity of our northern winters, and the violent changes of temperature at times incident to our climate. On the highlands, where the hills reach an altitude of four or five hundred feet, and where the temperature is lower and more uniform than it is in the valleys, the durability of the Pear^o tree is greater and the chances of fruiting it better; but on the low grounds throughout the western country, within the last five years, not only have the peach, pear, and cherry trees been destroyed, but thousands of apple trees of thirty and forty years' growth have been killed to the ground. Within eighteen years, I have grown up and lost two sets of pear trees with varied success as to fruiting them. The third set in my garden were covered last fall before any cold weather set in, and the straw left on them until about the first of May; yet on heading them back, the wood was found to be considerably discolored. And though they are making, with the abundant rains we have had, a vigorous growth, and may not this year exhibit any bad effects from it, yet I doubt whether a tree can be affected to discoloration for several seasons without ultimately exhibiting disease and premature decay. There is much that is compensatory in the interest created by fruit culture even with indifferent success. A series of mild winters occasionally allows to the cultivator a full reward for his labors, and while the chances in the pomological lottery remain, even as good as they now are, there is not much danger of a failure in either the supply or demand, even should the blanks as well as the prizes be presented for the consideration of the public.

Those who are discouraged with frosts, and the curculio, with blight, and black knot, can enjoy a great variety of the most wholesome fruit in the

world for four or five months in the year, by growing grapes under glass. And while on this subject, permit me to say that Mr. Saunders and myself do not differ much in practice in giving free nocturnal ventilation after the fruit has set. In a late article, he points out that permitting a change of from thirty to thirty-five degrees between the temperature of the day and night, is better than the eight or ten degrees recommended in the books.

I have not found that a change even of forty degrees does any apparent harm to the vines, which I suppose is as great as ever occurs at Philadelphia, but here we have occasionally greater extremes; thus on the twelfth of this month, (June,) the thermometer sank to forty degrees; and on the twentieth of June last year it sank to forty-five degrees. Such violent changes, I think, should be counteracted by closing the house, and to this I suppose Mr. S. would assent.

I made a report to the *Horticulturist* two years ago, upon some vines fruited the second season after planting, and the products of a grapery only twenty by twenty-two feet. The yield has continued to be over four hundred bunches per year, ranging from half a pound to a pound and a quarter in weight. Last season, long-continued rains injured a portion of the crop with mould—a difficulty I believe experienced elsewhere as well as here. For two nights in succession this spring, on the 26th and 27th of April, the temperature fell according to a self-registering thermometer in the grapery to within nineteen degrees of zero. The first and strongest buds, then some three inches grown, were destroyed, and the crop will this year be somewhat lighter than it was last.

I have never used any fire heat, nor have ever before had the fruit injured to any extent by the frost. I would advise any one building a cold grapery to make arrangements for a stove to guard against the above contingencies.

All my experience demonstrates the very great superiority of a grapery with an east and west over one with a southern exposure. The sun breaking out some cool day when the ventilators are closed, heats up the latter as suddenly as a hot bed, and it requires fully double the attention in this respect that the other does. I noticed last year that some Hamburg grapes, growing high upon the trellis, where they no doubt got rather too much sun and heat, were mere skin and juice, while those growing more in the shade and among the foliage were more palatable, with a sweeter and more substantial pulp. The Diana, unlike what its alleged parent, the Catawba, is said to do, grows thrifty and fruits well under glass.

The controversy about the genuineness of the Rebecca grape vines supplied from Massachusetts, seems to have been put at rest by establishing the purity of the article with a North River responsibility as to the quality.

We are often told about the propriety of purchasing from regular dealers, if we want a good article from the nurseries. I trust the regular dealers will not compromise the good character they enjoy, by sending out any more such insignificant plants, as were some of these Rebecca grapes. It is fair enough to charge a high price for a new vine of superior merit, but to give a buyer a plant of microscopic proportions which requires a bell glass for a fortnight to coax it into vitality, is not what he expects for his money, nor does a cultivator wish to spend four years in growing up a vine which, if properly started, can be produced in half of the time.

I shall be pleased to learn through Mr. Saunders or some of the Philadelphia cultivators, whether the Emily grape proves hardy enough for outdoor culture without protection.

RINGING THE GRAPE VINE.

THOSE who wish to try this mode of culture may do it with good effect. I am not acquainted with any fruit-bearing tree, of which the fruit can be so much improved and accelerated to maturity by ringing as that of the Vine. By this process the ripeness is forwarded about a fortnight, and the berries are nearly double in their size. The result is just the same, whether the vine is growing out of doors or under glass. I have practised upon both for the last twelve or fourteen years, at various seasons of the vine's growth, and to some considerable extent. Having a favored situation round my home here, of course I have been enabled to do as I liked.

One of my walls is fourteen yards long, facing the south; and another wall is ten yards, facing the east; and the whole about seven feet and a half in height. The whole of the walls are covered with vines. The soil is good, and the situation is good; but the wall is not, being old and in bad condition. It is not my own property, or I would remove this evil.

The vines are generally cultivated upon the *Hoare* system, or, as it is called, *the long-rod system*; but they are not so cultivated in every case, for sometimes an old bearer is spurred back to one or two buds, to carry its crop another year. My vines are very strong, and the rods, or branches, stand at least three feet, or even three feet six inches, distant from each other, when winter pruned. This allows just sufficient room for the fruit-bearing laterals, and a young rod to come up between every two bearers. This young rod, of course, to be the bearer of laterals the following year.

Thus, no vines cultivated on any other system are so capable of being rung, without the disadvantage of killing or losing the future useful part of the tree; because, on Hoare's long-rod system, the whole of the previous year's bearers will have to be cut entirely away.

The very right time to perform this ringing is just after the berries are all set, or have attained the size of No. 2 shot, or small peas. In ringing, cut with a sharp knife, clean round the branch between two joints. Or, if you are going to ring the laterals carrying the fruit, leave either two or three buds and leaves beyond the main stem, and make the ring just in the middle, between the third and fourth leaves, or joints. As I said before, make two cuts clean through the bark, quite down into the wood, one inch apart, and remove the bark clean away, all round the branch or lateral. By this means, if you are in the habit of spur pruning, the hinder buds are left all right to spur back to the following year. If you prune upon the long-rod system, you may ring the rod just wherever you please,—the whole branch if you like,—as this ringed part will have to be cut away entirely after the fruit is gathered.

The ringing is performed just the same on an old whole branch as in that of the young lateral carrying one or two bunches. I have repeatedly rung old branches, that have been carrying from twenty to thirty bunches of grapes, with the same good effect; only it has been such branches that I have intended to cut entirely away the following autumn. Of course, thinning out the berries of the bunches, and the bunches too, if excellence is to be aimed at, is of the utmost importance. The process of thinning cannot be too early attended to. I always begin as soon as the fruit is fairly set, and continue to remove all inferior berries, and this with a good pair of scissors, and clean fingers,—using my eyes to see what I am about, so as not to injure the berries by handling and mauling them.

* By thus practising ringing, I have produced for the last twelve or fourteen years, grapes, out-of-doors, that have puzzled many a tyro and others too.

Our indefatigable editors have both watched my progress in the vine culture, for years. My grapes have many a time puzzled the late Mr. Elphinston, when he was gardener to the late speaker to the House of Commons, now Lord Eversley, although I used to compete against him, with both indoor and out-door grapes, at our Hampshire horticultural show, in November.

As a matter of course, I had read of ringing fruit trees, &c., but it never struck me to put the same into practice until about fourteen years ago, when my attention was called to it in an amateur friend's garden,—Mr. Frampton, glass and paint merchant of this city. I happened to walk in and look at some vines, to which he was paying great attention at that time. This was in the month of September, and here I first saw the ringing process of the vine. Seeing a few bunches of the *Black Hamburg* so large in the berry, and all ripe, I began to inquire into the particulars, when Mr. Frampton kindly showed me where the branches were rung, and that the ringing was the cause of their being so very large and so early. I then wanted to know whence Mr. Frampton obtained his information, when he showed it to me in the "Penny Cyclopædia," from the pen of Professor Henslow.—THOS. WEAVER, gardener to the Warden of Winchester College.



[It is quite true that we have watched for some years, with great interest, the experiment on ringing vines carried on by Mr. Weaver, and we can authenticate his statement of the mode of ringing, and its results. It must not be done in that petty, timid manner hinted at by a cotemporary. There must be a ring of bark perfectly removed; the cuts being made boldly down to the very young wood, or alburnum, and every particle of bark, inner and outer, must be removed between the cuts. (See engraving.)

This drawing represents, faithfully, the ringed part of a rod at the close of autumn, and shows how the removal of the band of bark checked the return of the sap, and how, in consequence, the rod above the removed band increased in size beyond that portion of the rod below the band.

The effect upon the berries was, in every instance, to advance their early ripening a fortnight, and to about double the size and weight of the berries, when compared with those grown on unringed branches of the same vine. Nor was the color and bloom of the berries diminished; indeed, so excellent were they, that we have seen them exhibited deservedly by the side of grapes grown under glass, and they were sold in November, at Winchester, for half-a-crown a pound.

Ringing the branches of fruit trees, to render them fruitful, was practised in France, and recommended there in print, about one century and a half since. There are various letters upon the subject in the early volumes of the Horticultural Society's transactions, and in one of them (Vol. I., p. 107), published in 1808, Mr. Williams, of Pitmaston, gives full directions for ringing the grape vine. He tells the result in these words: "I invariably found that the fruit not only ripened earlier, but that the berries were considerably larger than usual, and more highly flavored."—ED. Cottage Gardener.]

EDITORS TABLE

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, Germantown, (Philadelphia,) Pa. Packages by Express, &c, should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

FRUIT.—With the exception of the smaller fruits and melons, this has not proved a favorable season. Apples and pears are scarce, and the latter, where there are any, are greatly infested with worms, so as to fall off prematurely. Peaches in moderate quantity have made their appearance. We regret to see by Mr. Buchanan's report, on another page, that the grape crop is poor at Cincinnati. There are discouragements in all businesses, but it will not do to give up.

CATALOGUES RECEIVED.—Wholesale catalogue for autumn of 1858. Du Page County Nurseries, Napierville, Ill., Lewis Ellsworth & Co., proprietors. A very full list which purchasers would do well to note. Also Supplement to Meehan's Hardy Trees and Shrubs.

EXPERIMENTAL GARDEN. It is gratifying to know that the Pennsylvania Horticultural Society has taken the initiatory step for creating an experimental garden, by appointing a committee to consider of a location. We trust it will not stop here. Rodney King, Esq's., speech on the occasion, exhibited a perfect grasp of the subject, and Mr. Buist was not less encouraging in his views.

BADGE OF AMERICAN FREEDOM.—In a late Oration, by Z. Collins Lee, Esq., before the Horticultural Society of West Chester, Pa., he regretted that, while the Lily of France, the Rose of Burgundy, the Shamrock and the Thistle, &c., were emblems of nations, with us, not one of the many beautiful productions of our soil is the badge of American freedom. Like the song which animates us in battle, he says, let us hereafter also point to some flower of our land which will meet us in the field, cheer us in absence, and delight us among strangers, and which, to the dying patriot's eye, shall revive the recollections of his home and country. He commends the subject to our fair country-women, who will present it as a gift from the beautiful to the brave, with which to return victorious or to return no more. "Botanicus," whom we strongly suspect to be the amiable and learned Dr. Darlington, suggests that the Kalmia—our indigenous American Laurel—be everywhere recognized as the emblem of our Great Republic, and worn as the cherished badge of a patriotic people, on all public occasions. The suggestion is not a bad one. Others have named the beautiful little early flower, the Epigæa; another, the Tulip Tree, or its flower, and the Rhododendron, but to all these *may* be urged some objection. What say the ladies?

BAGLEY'S PERPETUAL RASPBERRIES.—A basket of these raspberries was received, but in a state that does not allow of description, being utterly destroyed before they arrived. We welcome everything that *promises well*, but especially are we looking out for an improvement in the raspberry: to make it known, we copy the following from Mr. Bagley's circular:

"*Bagley's Perpetual Raspberries, New Haven, Conn.*—This is a new variety, originated in New Haven, has been cultivated four years, and has proved itself one of the best raspberries for market and private gardens. It is perfectly hardy; needs no protection during the winter. The canes are about four feet high, and form a beautiful branching bush that supports itself, and needs no stakes or training, and are entirely smooth and free from pricklers. The old canes bear a bountiful crop of delicious fruit during the month of July, when the new canes commence bearing, and continue to bear until frost. The same cane bears another crop the following year. They have received premiums, and high commendations from all parts where they have been exhibited, as well as from hundreds of persons in New Haven, and other places, who have seen and tasted them the present season."

DR. GRAY'S "HOW PLANTS GROW."—The *London Leader* says truly of this work, "The volume is remarkably meritorious in its classification of subjects, clear and precise in themselves, and is assisted by upwards of five hundred illustrative wood cuts." It is received both at home and abroad as a great improvement on any former publication, and being particularly lucid and understandable by the young, it will be introduced by those who have the good of the public schools more at heart than the interests of favored publishers of less valuable books.

PLEASURES OF INSECTS.—At a meeting of young people, it was agreed as a plan to exhibit their several acquirements in composition, imagination, and so forth, that each should produce a short account of insect life. A young lady almost instantly handed in the following, which received the award of merit, as it well deserved. "Insects generally, must lead a truly jovial life. Think what it must be to lodge in a lily. Imagine a palace of ivory or pearls, with pillars of silver and capitals of gold, all exhaling such a perfume as never rose from human censer. Fancy, again, the fun of tucking yourself up in the folds of a rose, rocked to sleep in the gentle sighs of summer air; nothing to do when you awake but to wash yourself in a dew-drop, and fall to and eat your bed clothes."

A BOTTLE OF SMOKE.—We had, says *Chambers' Journal*, such an article placed in our hands not long since. It was an ordinary glass bottle, such as those into which expert packers force a quart of porter; but which never, by any known process, can be compelled to disgorge more than a pint and a half. It contained a thin liquid of a bluish-gray color; and we were instructed to pour a certain proportion into such brine-pans as contained hams or other comestibles, for the purpose of imparting thereto the flavor peculiarly appertaining to smoked meats.

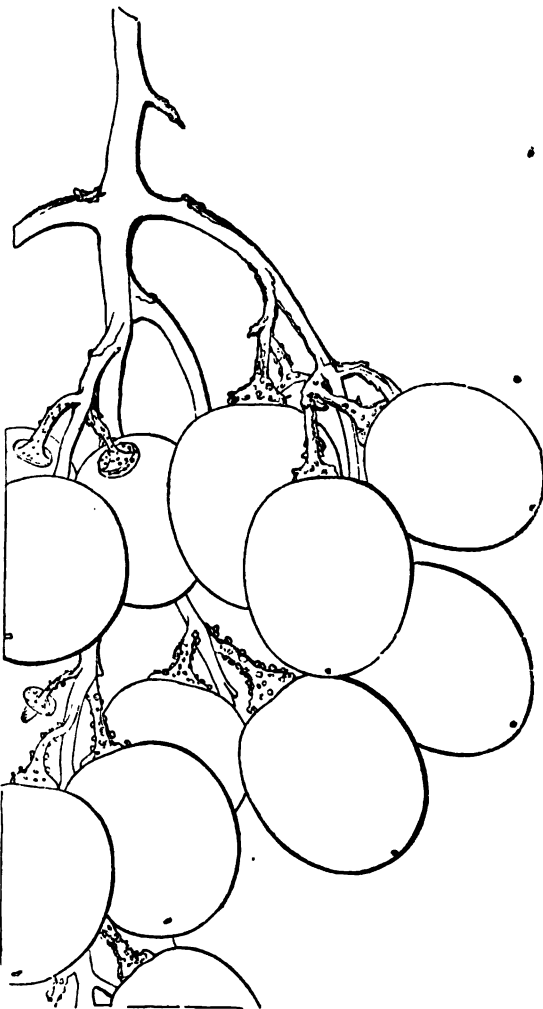
So we did; and very excellent we found the receipt to be.

Now, this liquid was not the cunningly devised product of chemistry, possessing the taste of smoke, without any approximation to the reality. It was real *bonâ-fide* smoke, procured from wood, and bottled up in its unadulterated purity, and was obtained in this wise: In South Wales, there exists an establishment for the manufactory of pyroligneous acid, an article much in favor with the great pickling-houses. What is generally supposed to be white-wine vinegar, is often, in reality, the product of these works; and it is well for the consumer if more deleterious ingredients are not used. As its name indicates, this acid is obtained from burning wood, of which large quantities are annually consumed. For some time, the smoke arising therefrom was allowed to escape; but these are not the times to waste anything. So, without the constraining influence of an act of parliament, the proprietors of the pyroligneous acid works resolved on economizing and utilizing their smoke. For this purpose they built over the pyre, a condensing chamber, and the smoke entering therein, and having no outlet, became converted into a fluid, such as we have described. In this state it was, and, we presume, still is, bottled off for public consumption; and its use effecting a great saving of expense in the curing of such meats as require to be smoked for the gratification of epicurean palates, a considerable demand for it has arisen. So that "a bottle of smoke" is no longer the impossible fiction which it was supposed to be in the good old times of our youth, but has been resolved into a substantial reality, and claims its place amongst those ingenious appetizers, which "no good housekeeper should be without." Is not this pyroligneous acid?

THE GOLDEN HAMBURGH GRAPE.—Frequent applications to know more of this grape are made by American correspondents. It has been distributed to some extent among our grape growers, and very probably some may already have fruit coming forward, of which we shall have report in due season. Meantime, we reproduce the cut inserted in 1856, for the information of those who may not have seen it.

At a meeting of the British Pomological Society soon after this superb grape was brought forward, it was resolved unanimously that "the Golden Hamburg is the finest of all white grapes, the Muscats only excepted." The Trentham Black also received a premium. Later accounts agree as to the value of the former in a remarkable manner. This and the Muscat Hamburg, the one a fine, yellowish, transparent grape, and in shape the very counterpart of the Black, and the other a black grape with a Muscat flavor, are, most probably, destined to be among the greatest favorites of our graperies, a Muscat flavor in a black fruit being very valuable.

The bunches of the Golden Hamburg are large, loose, branching, and shouldered, varying from six to nine inches in length, and the foot stalks are short and stout. Berries large, and hang loosely on the bunches, an inch long, and seven-eighths of an inch wide, and of a uniform oval shape, skin thin and tender, of a pale yellow color, but when highly ripened, of a pale amber. Flesh delicate and melting, very juicy, and remarkably rich, sugary, and vinous, leaving on the palate a full and luscious flavor. Each berry contains from two to three seeds.



GOLDEN HAMBURG GRAPE.

COOKS AND COOKING.—Many is the good thing spoiled by the cook; it might almost be doubted in some parts of our country, whether we had any cooks, so awfully is everything overdone, underdone, or served by slovens. The great hotels might set an example, but they go beyond the needs of the case, and give such frightful names to their dishes that plain people are at a loss what to ask for. If our good people who are interested in education, would open a cook's school in every section, life would be greatly prolonged; indeed we are not sure that

one of the questions of the life insurance companies, should not relate to the quality of the food usually consumed. Cooks, we know, are jealous of lectures, but they ought to be willing to learn what will keep those that pay them alive.

The Spartan cooks, even when their art was curbed and checked by the puritanical laws of their country, and their skill was doomed to evaporate in the steam of black broth, were as jealous of their honor as the most tenacious of modern artistes. One has gone down to all ages as reproving a monarch with equal boldness and wit, whilst resenting an insult to his own skill.

The king murmurs over the legal repast of his country—"the broth was naught."

"It lacks its seasoning," was the reply.

"What is that?"

"Labor and exercise, O king."

We suppose almost all readers know the story of the bet made by the French *gourmands*, one of whom asserted that he could detect the component parts of any dish put before him; the other, betting at great odds that he would not be able to tell the materials wherewith *his* cook would prepare a "savory dish" for them. The bet was taken; one confident in his quick natural sense; the other in the skill of his cook. The matter was of importance beyond a mere gambling transaction, because the fallen fortunes of a noble family would be raised by the timely pecuniary help. The cook—a Frenchman of course—exerted all his talents, and surpassed all praise. The dish was placed before the knowing epicure. He tastes, smacks his lips, tastes again, smells it—your epicures don't stand on elegance of manner in such a case!—tastes again. Alas! it is redolent of all rich odors; such sauces, so marvelously blended; such gravy, such solids—so soft, tender! What can it be? A wondrously prepared tripe? No! Calves' head in a new shape? No, no, no!—a thousand "Nos." Our epicure gives it up. "It is *old white kid gloves*!" is the cool explanation, when the bet is resigned up as lost.

To come again to American cookery; half the ill-health that so many people complain of is owing to the constant employment of improper or imperfectly cooked food. With all the French names in your bill of fare, the vegetables are but half done, while in the South all the young ladies call for fresh bread "red hot." An inspector of kitchens would be a useful public servant.

WILLOWS.—Anderson's Synopsis of North American Willows closes thus:

It appears that of the 58 North American species, 24 are identical with European ones, 24 belong to the same types, and only 10 western or arctic forms seem to be peculiar to this great continent: and further, that of the Scandinavian Flora only a single indigenous species or type is not found in America (a type which appears as if composed of almost every other), while 48 more or less related species or types are common to the New and Old World, but more luxuriant and varying in America, where we also find a number of other types. All this leads us to look to America as the chief abode, perhaps the original home, of the willows, and the country where the genus ought to be especially studied. Therefore we may call upon American botanists to apply themselves to the investigation of this genus and its intricate forms, as they have already done to another vast genus (*Carex*) which presents an analogous distribution.

Science, which prefers facts to hypotheses, has not yet sufficient materials to assure us whether and by what means, or in what ways, the original species were first diffused from single centres over distant parts of the earth; but all we know of the arctic and northern regions shows that their vegetation is very homogeneous. This synopsis may help to show, with regard to willows, that there are many links connecting Europe and America.

Note by Dr. Asa Gray.—There are about ten species of *Salix* from Oregon and the Rocky Mountains described, and two or three of them figured, in Nuttall's North American Sylva, which remain unknown to Prof. Anderson;—all or most of them he may be able to identify, when the volume reaches him with species enumerated in this synopsis.

CLIMATOLOGY.—In the United States and British America, the migratory masses have now

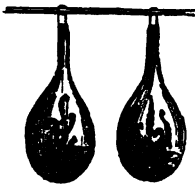
reached the limits of known climates, and are ready to advance over the immense areas of the interior of the West. The climate of these is the first question, since most other conditions essential to occupation are the incident of this, or rather are defined when this is defined. In equable and moderate climates the soil is always cultivatable, and in desert climates rarely so. Mountains and surface configurations affect these, but it is hardly possible that mild and favorable conditions should be largely neutralized by configuration alone. A man, before he builds a frame house should investigate whether or not there are hurricanes in his location which may carry it entirely away. Hence, the importance of the study of Climatology.

CULTURE IN A FERNERY.—A situation for a fernery should be chosen in a retired spot, and should be formed by throwing up a mound of earth, and facing it on both sides with rocks and roots of trees; or two banks of earth, faced similarly, and facing each other, with a walk between, would answer admirably. One bank should face the north, and the other the south. On the north side, near the base, the moisture-loving species should be planted, and higher up on the bank such as love shade. On the south bank, plant towards the base all that grow on hedge banks; and towards the top, such species as inhabit mountainous rocks, old walls, &c. By these judicious arrangements, nearly the whole hardy species may be grown successfully in a comparatively-speaking small space of ground. Suitable soils for such species must be put in for them. The dead fronds should be allowed to remain through the winter, to protect the roots from the frost. In the spring cut them all away, and make the fernery neat, adding a little fresh soil around the plants.

In one house, ferns from every quarter of the globe may be cultivated, provided the heat is sufficient for the tropical species; for though the natives of a hot climate will not thrive well in a low temperature, the species from cold climates will flourish in a much higher heat than their native wilds.

This is a great encouragement to an ardent cultivator, who is desirous of growing a large collection of these curious and singularly beautiful plants. A good collection of ferns, to a lover of plants, is as attractive and pleasing, if not more so, than any other tribe of plants, "always excepting Orchids."

THE FLORENCE FLASK.—The common Florence Flasks, in which salad oil is imported, make very pretty and useful vessels for the culture of minute flowering plants and ferns, and for the preservation of the lowest forms of either terrestrial or aquatic vegetation. A row of these



flasks may be suspended in a study window along a brass rod, each containing specimens of plants that would be inconspicuous in a general collection, though full of interest individually. The pretty wall-rose, the true maiden-hair, the adder's tongue, &c., may be thus grown. Some of the spleenworts, with lycopods and mosses, flourish in sandy peat carefully dropped into the flask; while in others, half filled with water, specimens of *Riccia*, *Lemna*, *Nitella*, *Conferva*, and other aquatics, make quite a garden of curiosities, worthy at any time of a quiet and studious inspection. Each flask should be covered with a piece of oiled silk, kept round the mouth by means of a small India-rubber band, so that it can be removed instantly for the supply of air and water. The only matter of importance in the management of such a collection is to keep the sun off of it, or at least to allow only his faintest morning beams to shine upon it; for an exposure for an hour at midday may cause the destruction of the whole. For raising seedling ferns, these flasks are admirable in the absence of other appliances.—*Hibberd's Rustic Adornments*.

A flask or bottle of clear glass with a wider mouth, and those having a flat bottom might also be experimented with to advantage.

LETTER FROM GEORGIA.—MR. EDITOR,—From all parts of the North my friends write me that the fair promises of the spring will not be realized; that fruit is dropping from the

trees, and that in some districts fruit crops will prove altogether a failure. Not so with us in the South. I never saw such an abundance of luscious fruit. Uncle Sam has got such a large garden, that there must always be some surplus in some corner, and he is of such fast and go-ahead habits, that the deficiency in one part can be readily supplied by the abundance in another. Thousands of boxes of peaches, nectarines and early apples; cartloads of melons and vegetables have been carried by rail and by paddle to your Northern markets; and that can be kept up for the next two months at least, if you want more of our products.

As this is the first summer I have spent in the South, I made it my duty to take careful notice of all the products of the woods, fields, and orchards as they followed in quick succession; and as you wish me to give my opinion about the resources of this section, I will state a few facts and data taken from my note book, or from memory. The section where I actually reside is three miles north of Augusta, Richmond county, Georgia. Our location is an extensive plateau or table-land, overlooking a distant horizon, and exposed to all the free, welcome breezes from all points of the compass. It is not a selected nook in some happy valley, sheltered or protected from extremes of cold or warmth, but a very exposed location, which must be taken as one of the main features of the interior of Georgia, so far as the condition and succession of products are concerned.

Our soil is varied, but the sub-soil is a deep bed of red clay or loam, with almost in all parts a black or brown sandy loam on the surface, smooth as muck, or mixed with small pebbles. The rock is very deep. Wells of fifty feet do not strike it. The soil is rolling, and covered with belts and groves of oak, tulip, maple, pine, and nearly all the northern deciduous forest trees, growing side by side with the *short* and *long-leaved* Southern pines; more graceful and taller, and of a deeper hue than the Italian pine, which it resembles somewhat in its form of a *dome*. So much for general features and graphic descriptions; and now to the main point, the fruits. In April we begin to live on strawberries—ripening early in the spring. They yield fruit as long as the spring showers last, and with good cultivation, and especially with irrigation, their fruit continues large and fine till August, as I have occasionally a plate now, (end of July,) but they are discarded for the more luscious peach. Towards June we have raspberries—but these require careful cultivation—apricots, and soon the early Northern and Southern apples: Early Harvest, red and white Astracan, Carolina Red June, Red Margaret, (a delicious small apple,) by this time the first planted melons come in, and by planting every fortnight, we have musk and water melons during the remainder of the summer. In the woods are thousands of wild plums, Chickasaws of all varieties as large as gages, but clingstones—exceedingly refreshing however, and fine for cooking and pies. The finest highbush blackberries I ever tasted, grow here in abundance. We have lots of Damask plums, gages, &c.; the curculio not seeming to like this fruit here as it does in the North.

At the end of June and beginning of July, to get that noble fruit the peach, in its thousand shapes, flavors, and varieties—the nectarines, the late apricots, apples, strawberries, and melons always going on—until satiated of peaches, we pick with new pleasure the ripe Catawba, the Chasselas grapes—white and black, (perfectly hardy in open air;) and now we shall have until November, peaches, grapes, many varieties of figs, (one of my favorite fruits,) apples, melons, pears—a most splendid fruit in Georgia! I must stop here, as my experience does not go further. All over the country grows a weed—a pest of the fields—the *Passiflora*, or May grass. If it were not for the many seeds it contains, I should prefer it to the finest confectionary. It contains one of the most luscious, rich, glutinous pulps; but although it is eagerly sought for and relished by most people, I cannot be prevailed to swallow the seed—so adherent to the pulp that it cannot well be separated from it. Many other small berries grow spontaneously in the woods. Crab apples can be gathered in quantities—all that may be good for vinegar and cider—but we have too many good apples at hand to care much for wild fruit.

And now, my dear sir, think of an actual frugivora, not a pomologist, but a *liver on fruit*, who can enjoy from the first of April till, perhaps, the middle of November, strawberries, peaches,

melons, plums, blackberries, grapes, apples, pears, figs, and pomegranates, besides the pine apple and the orange from Havana, if he wants these, and you will readily allow him to plant some trees in that quarter, and to sow some more hills with the musk and water melon, free from the bug, and some plum trees almost free from the curculio.

It would be almost an endless task to describe the varieties of fruit whose excellency is rarely if ever attained the other side of the Delaware. Let me only say that Bartlett's are ripe and luscious! that Catawbas, Isabellas, Chasselas, are ripening; and that I have eaten Doyenné d'Été, Madeleine, and Jargonelles, about the first of July, all of the finest quality. To fully understand what is a good peach and a good water melon, one should taste these fruits in the South, where they acquire a sugar flavor, size, and appearance, from the steady influence of the sun, which they cannot get in a very variable climate—as New Jersey and New York. Our Red Astracan apples, Summer Rose, &c., are decidedly better than in the North, and more richly colored, but Northern winter varieties of apples will not do here; fortunately we have native Southern varieties, till April, of the best qualities, of which, more anon.

P. S.—Though sorely tempted, I will not talk about our flowers; that splendid *Lagerstrœmia*, the *Yucca gloriosa*, now open in front of my retreat, both in sight of my desk, the one a stately white pyramid of bells; the other, now some six weeks, always a cloud of pink, delicate flowers; our creeping vines of all sorts, our Spireas, our Trumpets, &c.

DEATH OF MRS. LOUDON.—The widow of J. C. Loudon, the eminent botanical writer and landscape and architectural gardener, died in the second week of July last, leaving a place vacant in society and letters. Thirty years ago—then Miss Webb—she made her first appearance in print, in a remarkable novel called "The Mummy," which won for her not only public applause, but the hand of J. C. Loudon. In Mr. Loudon's works, she bore a share; and on her own separate account has produced a number of beautiful and important books, well known in every lady's library, and one of which was thought worthy of being edited by our own Downing.

DAWSON TURNER has also paid the debt of nature. He was distinguished in early life for his botanical studies, and afterwards for his antiquarian knowledge. He and Robert Brown—long united by friendship—expired within one week of each other. Turner, at the age of 73.

AIME BONPLAND, the veteran naturalist, has also been numbered among the dead, at the age of 85, at Montevideo.

AGRICULTURAL EXHIBITIONS FOR THE YEAR 1858.

Alabama, Montgomery, Oct. 18 to 22.
California, Marysville, Aug. 23 to 27.
Connecticut, Hartford, Oct. 12 to 15.
Georgia, Atlanta, Oct. 10 to 23.
Illinois, Centralia, Sept. 14 to 17.
Indiana, Indianapolis, Oct. 4 to 9.
Iowa, Oscaloosa, Sept. 28 to Oct. 1.
Kentucky, Louisville, Oct. 5 to 8.
Maine, Augusta, Sept. 21 to 24.
Maryland, Baltimore, Oct. 19 to 22.
Michigan, Detroit, Sept. 28 to Oct. 1.
Missouri, St. Louis, Sept. 6 to 11.
New Hampshire, Dover, Oct. 6 to 8.
New Jersey, Trenton, Sept. 14 to 17.

New York, Syracuse, Oct. 5 to 8.
North Carolina, Raleigh, Nov. 2 to 6.
Ohio, Sandusky, Sept. 15 to 19.
Pennsylvania, Pittsburg, Sept. 28 to Oct. 1.
Rhode Island, Providence, Sept. 28 to Oct. 1.
South Carolina, Columbia, Nov. 9 to 12.
Vermont, Burlington, Sept. 14 to 17.
Virginia, Petersburg, Nov. 2 to 6.
Wisconsin, Madison, Oct. 4 to 9.
United States, Richmond, Va., Oct. 25 to 30.
Horse Exhibition, Springfield, Mass., Sept. 14 to 17.
Canada East, Montreal, Sept. 28 to Oct. 1.
Canada West, Toronto, Sept. 28 to Oct. 1.

THE AMERICAN AGRICULTURIST is now also printed in German, and no doubt to advantage of reader and publisher. We should prefer it in its English dress, but no doubt it reads "all the same in Dutch" to those who understand it.

MR. EDITOR.—At a special meeting of the Horticultural Society of Morrisania, the following officers were elected for the ensuing year :

President, Samuel Munn. *Vice Presidents*, Wm. W. Fox, Robt. H. Elton, L. R. Osborn, Carp. Moger, Thos. W. Ball, H. M. Morris, Thos. E. Sutton, Francis I. Smith, Benj. D. Whitlock, Adrian James, F. W. Gilley, Lewis G. Morris, David Milliken, G. W. Alexander, Jas. Garner, Andrew Richardson, Jordan L. Mott, Jr., F. Grotè. *Secretary*, William H. Wilcox. *Treasurer*, Jas. L. Parshall. *Librarian*, James Stillman.

It was decided to hold an exhibition in the village of Morrisania on Wednesday and Thursday the 6th and 7th of October next, and Messrs. Samuel Munn, Wm. H. Wilcox, Geo. H. Pollock, Thos. E. Sutton, H. P. Sandford, G. W. Alexander, and Gilbert Dayton, were appointed a Committee of Arrangements for the same.

Respectfully yours,

WM. H. WILCOX, *Secretary*.

Morrisania, August 9, 1858.

GRAPES—*A new Enemy with a Defence against him*—J. JAY SMITH, ESQ.—Last season I noticed a singular kind of spot on some of my grapes, which at first induced me to think they were about coloring very early, but which afterwards proved to be something of a very different nature. All such soon became hard and dropped off. I then examined them, "but not very minutely," yet made no discovery. Had this attacked only those that were subject to rot, it would not have puzzled me so much; for wiser ones than I, have been and are yet in the dark as to the cause of the dry, purplish speck which is so common in the grape-rotting seasons, and which at this time threatens to destroy all my Catawbas; although the Louisa, which entwines with one of them, is perfectly clear of it. But to return to the first subject, different persons wrote to me inquiring what that meant, whether I knew the cause, or could suggest a remedy. Each one stated that it was different from the common rot, but quite as fatal—a fact demonstrated to me to my mortification on my own grounds. It appeared upon all my grapes—Louisa and Casady excepted—whether refined, or *Fox*, with a skin as thick as calfskin.

About ten days since, I observed the same thing making its appearance on a covered vine, but paid no particular attention to it. But it so happened that I gave all my vines a thorough dusting with lime, *air-slacked*, and flour of sulphur, equal quantities, applied after Mr. Read's mode, where the vines were trained high, but flinging it among them broadcast with the hand where it could be done. In a hot day, in passing these vines the sulphurous smell is quite apparent—to me, not offensive, but insects seem to have a dislike to it. That seemed to put an immediate stop to the *disease*, as I then thought it, but which I now feel satisfied is caused by an insect of the *curculio* class; as on examination, I discovered a worm in almost every one thus blotched, or rather a diffused color with sometimes a darker vein running through it. One was at least half an inch long, others half that length, and some so small that it took a magnifying glass to discern them distinctly. The disappearance of these injuries on the application of lime and sulphur, together with the discovery of the grub in the fruit, goes far to establish in my opinion that it is a species of *curculio*. Can it be that the rascals are like Cæsar of old, when the plums are all destroyed, they *weep* for another world to conquer? Lime and sulphur is too much for them, in the present case at least, but must be renewed when washed off by rains. All my vines, native and foreign, are free from mildew, except one, Canadian Chief, which I forgot to apply sulphur to; this was almost gone, having lost nearly all its leaves before I was aware of it.

Twenty-five native varieties are showing fruit with me this season, but it is discouraging to find that some which we pay high prices for, under high-sounding names, turn out to be old acquaintances. Isabella will have about a dozen extra names after a while. S. M.

August 2, 1858.

KNIPHOFIA, OR TRITOMA UVARIA.—DEAR SIR,—With this I send you a cut specimen of this plant, which has been so much praised in the English journals. I think you will say that the special premium awarded it by the Pennsylvania Horticultural Society last month, is well

merited. I believe it is very nearly or quite hardy. It is a very free bloomer in the open border. I have an idea that when more common, it will be as popular a summer and fall-blooming plant, as the *Dielytra spectabilis* is now for the spring. (If hardy, it is valuable, and certainly very beautiful.—ED).

I also hand you a specimen of the *Spiræ Billardii*, with flowers as deep in color as *S. callosa*; with a piece of the white *S. salicifolia*, from which it was, I presume, raised.

Not to cloy you with sweets, however, I also send a bloom of the *Clematis revoluta*, a herbaceous species, rising about two feet, and flowering very freely.

THOS. MEEHAN.

Germanatown.

TULIPS AND HYACINTHS.—MR. EDITOR,—Some twenty-five years ago, it was the custom of a neighbor of our's, to throw open his garden gates on a certain Sunday in each year, when multitudes from town and country, would flock together to see the *tulips*, of which there was perhaps a greater display than in any one other garden in the whole county.

Your correspondent, then being but a stripling of a boy, whose parents thought proper to keep out of such crowds, was sorely vexed, for even then I admired flowers; but thanks to the kind proprietor, (an old bachelor,) who would take me through his garden on a week day, show me his flowers, his trees, wild geese and ducks, domesticated Guinea fowls, rare hens, &c. Oh, how these little incidents call me back a quarter of a century, and make me feel almost young again.

Well! tulips and hyacinths were ever after favorites with me, but I never had a choice one of my own, until my interest was again excited by seeing a report of the Philadelphia exhibitions for several years, wherein I noticed in nearly all instances Peter Raab, (our florist friend,) of Seventh and Parrish streets, Philadelphia, took the highest premiums.

Last summer I ordered from him some bulbs of both tulips and hyacinths; owing to the delay of the vessel which imported the bulbs, I did not get them until December, and thought it would be a poor affair; yet I planted them as well as I knew how. This spring they started early; and such hyacinths! why, the very best I could find in well-kept gardens here, were no comparison to the very poorest of mine. Every color, from pure white to nearly black; double and single, had spikes nearly a foot long. They were the admiration of every one. Every one ordered roots, but I had to tell them they were not for sale. Instead of selling what I have, my order for some hundreds more has been sent to Europe some time ago. Any one who has once seen such hyacinths as those will not think of being without them. The tulips were equally fine, and showed the country people here what *tulips* are.

M.

BLACKBERRY WINE.—It is a fact which ought to be universally known, that the blackberry yields a wine of the utmost value. Not only is it very delicious when it is properly made, the flavor being not unlike that of the better class of wines in the south of France, but it is held by many judicious physicians to be preferable to any other wines for certain diseases. Until quite recently, I was not aware either of the delicate flavor of the blackberry wine, or of its excellent medicinal properties. A week or two since, while on a visit to Norwalk, I called upon my old friends Messrs. George Seymour & Co., who have done so much, as your readers are no doubt aware, in cultivating and disseminating the plant of the Lawton or New Rochelle blackberry. Mr. Seymour showed me a specimen of this wine, made from the berries of last season, of a quality which I had not supposed this fruit capable of yielding. Mr. Seymour informed me that it was made with very little labor and expense, and recommends that those who cultivate the New Rochelle blackberry largely, should produce more or less wine. For himself, he intends to make at least one hundred barrels.

By the way, everybody and everybody's wife and sister, within fifty miles of Norwalk, ought to visit Mr. Seymour's nursery and see these blackberries. If it does not prove to every visitor to be the most astonishing exhibition, in the way of small fruit—I had almost said of any kind of fruit—I will, during the remainder of my days, consent to hide my diminished head,

whenever anything is said on the subject of blackberries. There is no use in telling stories about this extraordinary variety. Nobody will believe them. People must go and see for themselves, before they can be convinced of the credibility of other eye-witnesses. F. C. W.

NOTE ON MASTODON GIGANTEUS.—Most of the skeleton of a mastodon giganteus was found during the winter of 1851 and '52, three and a-half miles north of Natchez, Mississippi, in a better state of preservation than any we believe to have been discovered within the United States. They belong to Andrew Brown, Esq., of Natchez, to whom we are indebted for the following particulars, and who was at the spot shortly after the discovery of the bones, which were imbedded in a compact, blue clay, at the depth of eighteen or twenty feet. The contents of the stomach—found nearly entire between the ribs—presented a mass of imperfectly masticated twigs and leaves, belonging to species similar to those now growing in that vicinity. These contents crumbled to pieces soon after being exposed to the air, while portions of wood found among the other bones are still in a good state of preservation. While washing the dirt from the bones, the glutinous matter exuding from them, caused the fingers to stick together, after which Mr. Brown caused them to be removed to a remote room on his premises to dry; where the decay of their animal matter became so exceedingly offensive, that they had to be removed again to a distant out-building, where they remained at least a year, before they were free from their disagreeable odor. Mr. B. says the scent coming from the building resembled that of an old slaughter house; or that of animals recently dead. Mr. B. has nearly the entire skeleton; portions of the big bones and part of the upper jaw are still wanting. He estimates the animal to have been about thirteen feet in height. Its tusks, found entire, are eight feet in length. S. B. BUCKLEY.

ANSWERS TO CORRESPONDENTS.

FELTEN'S IMPROVED ALBANY SEEDLING.—Several correspondents have written to know about this strawberry, advertised in the last number. It may be all that is claimed for it, but certainly it would have been better to have had it endorsed by some society, or some well-known pomologist, instead of flashing it before the public in the manner it has been done. One writer says, "How has the Albany been *improved*? or how can a strawberry whose character has become *fixed*, be improved or changed? Its seed may be sown, and *another* variety established, different and *perhaps* better than the parent, but this is *another* strawberry, and should not claim the same name." We rather think it might have been better to have called it simply Felten's Seedling, and if better than Wilson's it would soon be known. Altogether, taking the mode in which it has been sprung upon the public, it might be best for the public to wait a little.

P. P.—WEEDS IN LAWNS.—We are too much crowded with matter to reply this month. Send your address.

WORCESTER CO., MASS.—Consult Downing's "Landscape Gardening," and "Breck's Flower Garden," for the list you desire. Delphinium formosum, and D. Hendersoni, with Dielytra spectabilis, should be added to the old lists.

JAMES S. NEGLEY, Pittsburg, Pa.—The thirty-inch long cucumbers, without spines, came in good order. They are quite remarkable as having been grown in a frame without artificial heat and an excellent kind, are received.

DOUBLE PETUNIA.—ISAAC COLLINS, Columbia, S. C.—The English and French florists have now many varieties of double Petunias—doubtless some of our enterprising florists have them imported and under propagation; but we have not seen any offered for sale. We cannot say whether yours is equal to or better than any of these. It may be worth more than any of them. The double white (P. imperialis) is the only one much known as yet.

SEEDLING PHILADELPHUS, OR SYRINGA.—J. W. S.—You must not expect infallibility in a committee of a society any more than in an individual. All are liable to err. In the case

in question, they are undoubtedly wrong in reporting a new variety "similar to *P. coronarius* but fragrant." *Philadelphus coronarius* is the sweetest of the genus, and its common name of "Mock Orange," is given to it on account of its purity and fragrance.

GOSSIP.

LORD STANLEY, before quitting the Colonial Office, authorized a grant of 1000*l.* towards defraying the cost of a complete account of Australian vegetation.

SEEDS.—There are numerous gardeners as well as amateurs all over the country who have no idea what to do with seeds when they get them. Of this a notable instance occurred some 30 years ago. A gentleman having given a cone of a new pine tree to his gardener, with orders to raise it, upon inquiring some months afterwards how many plants had come up, was told that none had been raised. "That is very extraordinary, for my neighbor, Mr. H—, has plenty of seedlings, and they are now potted off. Let me see what you have done." Imagine the surprise of the gentleman when upon examining the seedpot he found that his gardener had *sown the cone!* This happened 30 years ago, but we fear it is still possible to find people who would sow a pine cone.

A NEW DODGE IN THE POT CULTURE OF GRAPES TO GAIN A PRIZE.—Draw a fine strong stem through the bottom hole of a pot, fill the pot with good mould, let the latter hang or otherwise. When the grapes are ripe and just before the show, cut off the vine; it will not flag before you gain the prize, and perhaps get home. I wish to ask is this an honest plan of pot culture, or do you think it as bad as borrowing plants and fruits of neighbors, to help to gain a prize?—*James Cuthill, Camberwell.* [Such practice is roguery.]

THE fourth part of volume V. of "Walpers' *Annales Botanices Systematicæ*" has appeared. It commences with *Chrysobalanæ*, and ends among *Melastomacæ*.

THE "Journal of the Proceedings of the Linnæan Society," No. 8, completes the second volume of this really valuable work. The part contains the completion of Dr. Ferdinand Mueller's interesting report on Gregory's N. Australian expedition; and another important paper on the Flora of India, by Drs. Hooker and Thomson. There is also a discussion concerning the well-known allegation that Linnæus called a plant *Bufonia* in ridicule of Buffon, the great French zoologist; the result of the inquiry, by Prof. Fe, of Strasburgh, and of Mr. Bennett, is to acquit Linnæus, and to show that nobody was to blame. Among the crowd of Indian novelties described by the learned botanists just mentioned, are two "genuine species of *Lonicera*," with large obicular reflexed stipules!

THE following new and important facts concerning the vine disease, form the subject of a paper just presented to the French Academy of Sciences, by M. de la Vergne: 1. The oidium does not spread to any alarming extent, except when the temperature is, day and night, above twenty degrees Centigrade (68 Fahrenheit), as is the case in the neighborhood of Bordeaux, from the end of May to that of September. Whenever northern winds prevail in the interval, or frequent rains lower the temperature considerably, the growth of the oidium is stopped, to acquire fresh vigor, as soon as the sun adds warmth to the humidity with which the parasite is saturated. The same vine plant is not always equally subject to the attacks of the oidium, nor at the same time of the year; nor are different species of vines equally invaded in different soils or situations. Hence, the operation of sulphuring need not extend to every point attacked, or to be repeated during the whole duration of the malady.

ALONG with a singularly beautiful conservatory, Mr. Ormson exhibited lately, at Chiswick, an apparatus which combined the power of ventilating in cold weather, as well as heating, better

than anything we have yet seen. At short intervals, the usual hot-water horizontal pipes, are connected by square chambers, also filled with hot water. These chambers are cased with iron. The cases are connected on one hand with the open air, by means of horizontal iron flues passing through the wall, and fitted on the outside with sliding doors; on the other hand they open directly into the house through a grating formed on the inside of the cases. Although this is only an improvement on a method of heating already well known, yet it is an improvement, inasmuch as by no conceivable negligence can fresh air be either burnt, or cooled down in its passage through the cases into the house. The fault of the contrivance appeared to us to consist in the gratings being far too small. It is said that hot-water pipes thus fitted up cost more than the usual apparatus, which we think likely. It costs us more to wear both a coat and shirt, than a coat only; but we prefer the extra expense for the sake of the extra comfort.

CAMELLIA JAPONICAS may be excited when making their growth, but not when the bloom has set. Therefore all shifting to larger pots is better done while they are growing, and if it be inconvenient to shift them, liquid manure may be given once in four times watering. But there are many sorts of liquid manure; a good shovelful of well-rotted dung, in ten gallons of water, well-stirred up for a day or two, and then the clear water used, makes an excellent liquid manure, but it should never be given to any plant that is at rest.

WE hear of glass promenades and glass walls, springing up in every direction for fruits; why has no one thought of applying them for the growth of a very ornamental class of plants—namely, green-house climbers, which are very rarely done justice to, or get what they deserve—the full range of a glass roof, without which they rarely thrive well; certainly not so as to show their graceful growth, nor yet to bloom with that profuseness and continuousness which they will do, when their roots are allowed to ramble in the free soil of a border, and their tops to take their own pleasure under the glass roof?

A PLANT to hide hot-water pipes in a warm conservatory, would be *Ficus stipulata*, made to run over a wooden trellis, or a rough wall. Give it a mixture of loam, peat, and lime-rubbish, though it is not at all particular as to soil, and requires but little. Some of the species of *Cissus*, such as *antarctica*, or *capensis*, would cover the space quicker. But they are more rambling, and we question if they would stand the heat of the pipes equally well.

THE *Hydrangea* is cultivated and pruned in two different ways, for pot-culture, and the pruning for out-door plants, is a third mode. The grape vine is also pruned three or four ways for different styles of culture: and to prune the vine, or the *Hydrangea*, or any other plant, in a different way from that which it needs, under a particular system of culture, is sure to end in failure. The safest way to prune the *Hydrangea*, for out-door culture, is never to cut back one morsel of the young wood till it has done flowering, and then to cut it back entirely to the old wood; never to cut back the old wood until it gets too crowded, and then to cut back to a promising young shoot; to thin out the young shoots when they are three joints long, if they come much crowded, and not to allow suckers to grow from the roots on any account whatever. There is nothing differing in principle between pruning a gooseberry bush and a *Hydrangea* bush: the old thumb rule, and the best rule for gooseberry pruning, is—"What you cut, cut clean out, and what you leave do not touch with the knife." But the drooping kinds of gooseberries require some of the points of the young shoots to be cut back—so much the worse for them,

CURIOSITY OF VEGETATION.—The correspondent of a *Rural* paper lately declared that, "The fact is this: upon a grape-vine growing in this town, and having for its support a hickory tree, was found, some weeks ago, a fruit of this description: The outside husk and general appearance, that of a hickory nut, though not quite so large as the nuts upon the tree, completely filled with a hard, sour, *grape pulp*, and in the centre, what appeared like several grape seeds, crowded and joined together." This specimen was examined by several persons likely

* It must have looked very much like sour mush and milk, with a few *high-bred* blackberry seeds in it; this would *sell* well to the bulls and bears of Wall street if they could get a good *stock*!—P. D.

to be interested in such matters," and so on, and he then asks whether the grape may not be worked on the hickory; we give him the benefit of the next paragraph; he says, "I assert," notwithstanding the *fact*, "no such probability, but suggest the query for the curious." So much for the credit of the editor and his communicant.

Now, we confess ourselves among the "curious" part of mankind, and wonder the controller of the press did not make further inquiries regarding the existence of so rare a fruit, for which Barnum would have exchanged his most celebrated curiosities. In this spirit of curiosity we suggest the following "queries" to be solved by the parties concerned in the promulgation of this peculiarity:

1. Did either of you make further search, for the pleasure and advantage of science? If not, why not?

2. Was the fruit of a *green* color, or was it *deep red*?

3. Have you any idea of the hardness of the shell of the hybrid? Could you *crack* it with your teeth, like a *soft* shelled almond?

4. Were the seeds and pulp like the haw, or would you suppose a botanist seeing them (or the paragraph), would be tempted to cachinate thus—*ha! ha!! haw!!!*

5. Wouldn't you think it would be a hickory-nut on one side and a grape on the other; one side hard and one side *soft*? And how thick, think you, would be the skin of the grape side? Could the curculio penetrate it?

6. What description of wine would the fruit make? would it be Tokay, or simply O. K.?

7. If it is a reasonable question, look you, what kind of a raisin grape would it be? And would not the shell interfere in making a *jam*?

8. As a good name is important, how would it do to call it the "Rural's Foundling?"

9. If cleft-grafted on the sloe would it make white wine *vinegar*? and would this make a dressing for *gammon*? if on the oak would it make *galls*?

10. In making a border for them in a *cool* grapery could a mus-cat flavor be imparted by burying *kittens* at the root? Would not the hickory limbs poke through and break the upper sashes of glass?

11. Is it likely to be much in vogue "for market purposes?" How does it taste with your *roasted goose*?

12. Would the branches be better than birch for the little boys who don't "promise well?" or could they be turned to advantage to *smoke*? And finally, can your *most* bellicose correspondent translate "*Hinc illæ lachrymæ*?"

Somebody adds: "As our friend Sairey Gamp would say, 'What they see, they know, and what they know, they'll stick to; and if the expogure has done nothing else, it has taught people things as they didn't know afore. And as Mrs. Harris said, only last Friday as ever was, Sairey, says she, nobody never knows too much of nothing.'" When people get very unruly they require a little American *Punching*.

A. SPORT.

MISCELLANEA.

AN IMPORTANT ITEM.—From the single port of Norfolk, Va., there were shipped during June and to the present time in July, 97,000 packages of early fruit and vegetables, valued at \$336,000.

A SHOWER OF FLIES.—A recent number of the St. Louis Democrat says: "On the down trip of the steamer 'Editor' in the Illinois, the other night, at nine o'clock a shower or stream of the Mormon or Shad fly poured upon her decks, to the depth of six inches, and it was a very difficult matter to shovel them overboard. They were so numerous as to put out the

watchman's light and envelop everything in midnight darkness. The trees along the shore look as if borne down by these short-lived insects. The visitation is said to prognosticate a sickly season."

SEATS AND CHAIRS.—At the late Chiswick exhibition, seats and chairs were shown in abundance. Some were admired for their cheapness; others, like Dean's and those from the Panklibanon Company, for the beauty of their castings. Patterns of small chairs for one person only from the last-named company, were especially deserving of notice. They had moveable cane bottoms, and could be otherwise folded up so as to go into small compass. Some of these, all except the seat, were black as ebony; others were bronzed, and all were of elegant design and very comfortable to sit on. We also observed some nice earthenware seats in the form of stumps of trees. One, representing a piece of a trunk of an elm tree, had bark on it excellently formed and covered with lichen. Another, not quite so natural in appearance, was in the shape of a block of oak with a sprig of ivy running round it. Such seats as these must, we should think, be regarded as a great improvement on the old Chinese seats that were wont to be, and are now in some places, so much in fashion.

SALAD SAUCE.—The sauces or mixtures in use, says the "Gardeners' Chronicle," "are either detestable or indigestible. Stuff, sold under the name of salad cream, is both, whatever the *dura ilia messorum* or their masters may say to the contrary. *Mayonnaise sauce* is the thing. Make it thus. Take the yolks of two new laid eggs; throw away the whites. Add to the yolks a dust of cayenne pepper, and a teaspoonful of fine salad oil. Rub the mixture with a spoon until it is perfectly smooth; add another spoonful of oil and again rub the mixture down till it is smooth, and thus proceed until one-third of a pint of oil has been used. Then, and not before, add a tablespoonful of water, mixing it well with the spoon as before. Finally dissolve in three tablespoonfuls of vinegar a little sugar and a little salt. Bray them once more till the mixture is smooth, and you have a salad sauce fit for a queen. But if your oil is not quite sweet and good, all your trouble will have been thrown away.

SCARLET RHODODENDRONS.—Everybody loves scarlet,—of course the lover of flowers whose taste is matured loves all colors, including scarlet; but ask the unsophisticated school-boy what colored flowers he would prefer, and odds are, that the answer will be, "Scarlet, sir, if you please." "Well," says the 'Cottage Gardener,' "lose no time in paying a visit to the Royal Botanic Gardens,—always worth a visit in June, but now pre-eminently so by the attraction of Mr. John Waterer's Scarlet Rhododendrons. There are other colors, rich, gorgeous, most attractive; but the scarlets we verily believe to be unequalled: they alone are worth a journey from John O'Groats to see."

BEAUTY OF THE SEA-WEEDS.—Of all the sea-weeds for an aquarium, the *Green Laver* is, perhaps, the very best. It is very pretty, from its delicate green color, and the various folds and puckers into which it throws itself. Its power of expiring oxygen seems to be almost unlimited. I have in my aquarium a large plant of this species, which generally lives very contentedly in the place where it had been deposited. But, a few days ago, the sun shone brightly enough to pierce through the veil of smoke with which the metropolis is generally hidden from his presence, and consequently there was a greater abundance of light than usual. On looking at the aquarium, I found that the ulva had risen in the water, and was hanging in most elegant festoons from the surface, forming emerald caves and grottoes, such as the sea-nymphs would love. Even at a little distance it was a pretty sight, but a closer inspection revealed still more beauties; for, being excited by the unwonted light, the plant had poured forth so much oxygen, that its entire surface was thickly studded with tiny sparkling beads, that had buoyed up the whole plant, each bubble acting as a miniature balloon. When, however, a black cloud came over the sun, the bubbles soon detached themselves, ascended to the surface, and, as there were no more to take their place, down dropped the plant to the bottom. (*The Common Objects of the Sea-shore, by the Rev. J. G. Wood.*)

ALL the Acacias, Mimosas, and, indeed, all the Pea-flowering plants from most parts of the world, will stand a touch of boiling water, and many of them will hardly vegetate without a dip in boiling water, a fact which is as common to gardeners as their pruning knives, but not the less interesting nevertheless.

Notes for the Month.

VINEYARD CALENDAR FOR SEPTEMBER.

BY R. BUCHANAN, CINCINNATI, OHIO.

BUT little work is required in the vineyard this month. Weeds may be kept down by the hoe, or a light plowing—which some vine-growers think useful to the ripening of the fruit. I do not, however, and prefer letting the vineyard alone, except to tie up loose or fallen branches. The grapes will begin to color the first week in this month—and in forward seasons, to ripen about the last week in it—but the vintage should not commence until the first or second week in October, or until the fruit is thoroughly ripe. The yield will not be so great, but the wine will be much better. The practice of breaking off the ends of the bearing wood intended for next year, is a bad one, and should be abandoned. The wood ripens better without this effort to force its maturity, and the danger of starting the young buds prematurely will be avoided.

Previous to the commencement of the vintage, the press, tubs, and casks, must be well cleansed, first with warm, and then with cold water; and everything about the wine-house and cellar, put in the most perfect order. Neatness and cleanliness, is as necessary in making wine, as in making butter.

In the calendar for August, "grub," was printed for *rot*.

NOTE.—The *rot* during July, and early in August, was so destructive in the vineyards of the West and Southwest, as to leave scarcely more than one-fourth or one-fifth of an average crop on the vines. There are a few good crops in particular localities; but very few. Kelly's Island, in Lake Erie, opposite Sandusky, is one of those favored spots.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

HARDINESS OF PLANTS.—The amount of cold that plants are capable of resisting is a question of much interest to fruit cultivators; and it becomes the more interesting when we reflect that this power is dependent upon circumstances, which are, to a certain extent, under the control of the cultivator. It is no uncommon circumstance to find a plant at one time killed with a less degree of cold than it had previously endured without the slightest injury; even the hardiest of trees will be injured by slight frost if they are subjected to it when their power of repelling cold is at its minimum, and this is a frequent, secret and unseen cause of disease and death.

While it cannot be shown that frost is actually beneficial to plants, we know that its injurious effects are not always immediately visible, and that it is a growing and well-based opinion, founded upon close observation, that many of the diseases of trees are the result of repeated injuries from the frosts, and extreme changes of temperature during winter.

Notwithstanding the importance of this question, it has not received that attention from practical men that it deserves, and even the contributions of science, although highly valuable, have not been of a nature to render much practical aid in this department of horticulture.

The theory propounded by De Candolle, may be here quoted, namely, that, as a general rule, the power of plants to resist extremes of temperature is: First, in the inverse ratio of the quantity of water which they contain. Secondly, in proportion to the viscosity of their fluids. Thirdly, in the inverse ratio of the rapidity with which their fluids circulate. Fourthly, in proportion to the size of the cells, so is the liability of plants to freeze. Fifthly, the power of plants to resist the extremes of temperature, is in exact proportion to the amount of confined air which the structure of the plants themselves enables them to contain. These and other principles are promulgated; and apart from practical observation are sufficient to form the

groundwork for theory. There is not much, however, in the above calculated to be of material aid to the cultivator. He cannot ascertain the dimensions of the cells, any more than he can measure the quantity or decide upon the quality of the fluids with which they are filled. The wood of the orange tree is to all appearance as close and hard as an oak, yet the former will not stand our winters. The willow and the fig have the softest and the lightest of wood, the one is hardy and the other is not.

Although physiologists have not been able to give us broad and well-defined distinctions, or any definite explanation why one plant is hardier than another, except that its constitution is adapted to its natural climate; we know that all plants are rendered more capable of resisting extremes when their wood is properly matured, or ripened.

The ripening process consists in the slow and complete removal of watery matter, and the conversion of fluid organizable matter into the more solid substances which are necessary to form the woody secretions of the plant. This is, so far, in accordance with the theory of De Candolle, since the riper the wood, the dryer is its tissue, and the more solid its secretions.

The effects of thorough ripening of the wood is not only seen in the power it confers of resisting cold; a more important result is that it provides an abundance of the secretions necessary to sustain the growth of the following spring, and produce the flower buds upon which the hopes of the florist as well as the orchardist are founded; it is well known that flowers will not be produced upon the apple, pear, or strawberry any more than upon the camellia or rose, unless the elements of growth have been sufficiently abundant, and presented in due relative proportions to perfect previous growth.

Referring to these well-known facts, we see how far it is in our power to assist nature in supplying the requisites for perfect maturation of growth. The fruit-grower will be careful that his trees are not planted in wet, or highly enriched soil, that would tend to prolonged growth in the fall—that his strawberry plants are not overgrown by weeds after the crop is gathered, but are carefully cleaned and thinned—that his raspberry plants have been divested of all old wood as soon as the crop was removed, and the young growth thinned to proper distances, and disposed to the full enjoyment of light and air.

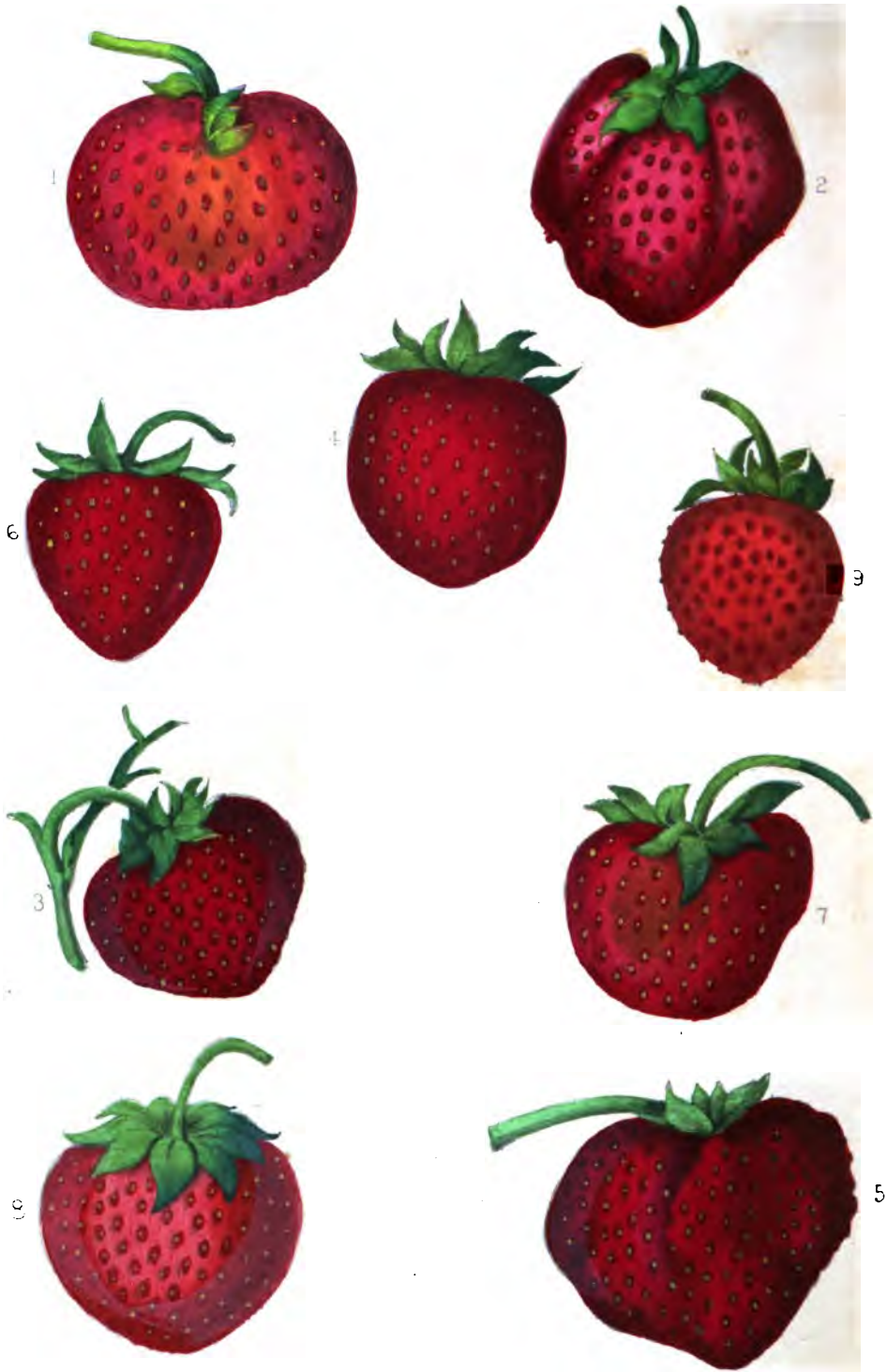
The florist will learn how his tender roses may be rendered more hardy, and the absurdity of attempting to force flowers on a camellia in spring, that had not formed the flower-buds during the previous summer.

And the amateur may also experiment, and with great hopes of success, upon his *Cryptomerias*, *Deodars* and *Washingtonias*, that are growing excessively luxuriant; by an early check to growth, either by covering the ground to prevent the ingress of water to their roots, or, sever a few of the main roots sometime previous to the natural completion of growth, so that the shoots will become dry and hard, the buds plump and ripe; and the plant, before being overtaken by frost, be in a comparatively dormant state, and the shoots and bark, instead of being unripe and full of sap, be mature, hard, firm, and quite prepared for sudden and extreme changes of temperature. A few years of such treatment would probably induce permanent hardiness, as many plants perfectly hardy when old, are easily killed down when young. This we consider the most important, and indeed the only true safeguard against injury from frost.

STRAWBERRIES.—There is no better strawberry for general purposes than the true "Wilson's Albany Seedling." It is gradually superceding all others wherever introduced. It bears remarkable crops. "Peabody's Seedling" does not seem to have come up to the high anticipations expected to be realized from it. Being a strong robust grower, it requires to be cultivated in hills, and the runners kept under. When thus treated, it has produced a fair crop of magnificent fruit. Its peculiar flavor is highly relished by many persons.

ORNAMENTAL WATER.—When appropriately introduced, the effect of water in pleasure ground scenery is always pleasing, and frequently, strikingly beautiful. The first requisite is, of course, an ample supply of water; there cannot well be a more unsatisfactory feature in a pleasure ground than a lake or pond when the supply of water is not sufficient to keep it properly filled. The best and most constant supply is that afforded by a running stream, and in this case the lake will appear more natural if a dam is thrown at the lowest point so that the sheet of water will appear as a simple widening of the stream. Most beautiful irregularities of outline will generally be produced by this mode of treatment. Simple basins of water in flower gardens, or pleasure grounds, can scarcely be out of character in any situation; with such, no attempt should be made to aim at a rugged or what is generally called a *natural* looking outline. The attempt so frequently insisted upon in all rural accompaniments to make them "*natural looking*" is a perversion of, instead of being in accordance with, good taste. With equal propriety might it be argued that the best model for the front of a dwelling, would be a rocky precipice, and the front door like the entrance to a cave.

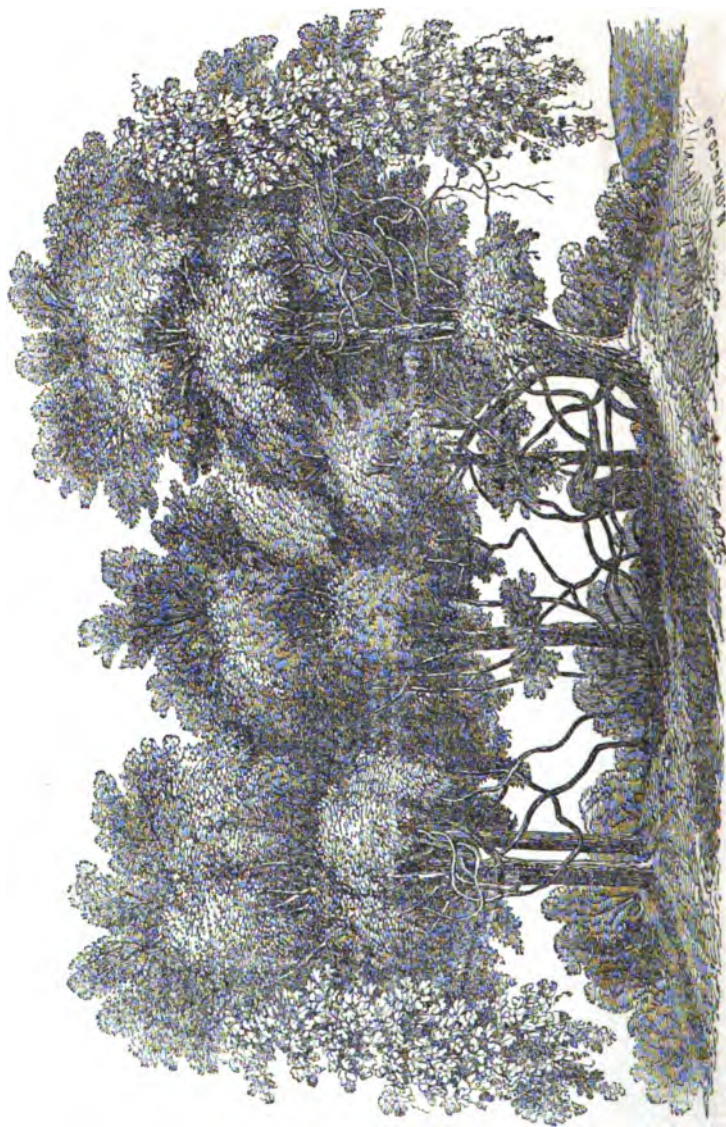
Where natural facilities for a good supply of water do not exist, artificial lakes had better not be attempted. The casual supply derived from winter rains is not sufficient to meet the evaporation of summer, and ponds or lakes which are dependent for a supply of water from this source, do not only present a miserably deficient appearance, but are injurious to health.



1.TROLLOPES VICTORIA. 2.VICOMTE HERICART DE THURY. 3.PRINCESS ROYAL
 4.WILSON'S ALBANY SEEDLING. 5.FILLMORE. 6.JENNY'S SEEDLING.
 7.M^{rs} AVOY'S SUPERIOR. 8.LONGWORTH'S PROLIFIC. 9.BURR'S NEW PINE.







GIGANTIC GRAPE VINE AT WEST HILL, BURLINGTON COUNTY, NEW JERSEY.

A Trip to Canada—No. 2.



WE return on our route to pay a passing tribute to the *Descent of the St. Lawrence*.—The landscape gardener may take lessons from nature in its grandest array as he passes the rapids of this mighty river, now more than usually brimming full, spreading across a space sometimes seven miles in extent, and studded by its "thousand isles." The poet might sing of its beauties in as many strains as Tennyson has done in his "*In Memoriam*," and yet fail to convey to the mind the impressions which a glance of the eye imparts. The islands are not, as description might lead one to expect, so near the channel that the limbs of the trees brush the deck of the boat; everything is on so grand a scale that there is room and verge enough for the steamers to ply their trade without contact. Some large and some with less than a rod of land, these islands are beautifully wooded; rarely inhabited, there they stand in their individuality, nature asserting her supremacy, trees growing and decaying, and the wild flower and the wilder bird in perpetual possession of one of the most charming and enchanting pictures which man can ever hope to look upon; pictures which put to shame his own efforts, and make, in comparison, his attempts at the sublime quite inconspicuous. What is "Virginia Water," and what the commonplace efforts at *making* small lakes, when compared with this gigantic stream? Beauty on such a scale requires one to alter all their measurements, and finally to fall back in despair at imitations. We could describe it only as they do the Bay of Naples—See the St. Lawrence and die!

The water, as before remarked, of the lakes above and of this whole water-way, is higher than usual, and has been so for many months. Where a fall or a "rapid" occurs, the appearance of danger, as well as of beauty, is greater than at some periods. As your boat shoots through the worn channels, surrounded by the agitated waters, an unaccustomed visitor almost holds his breath with fear, admiration, and the delight of a new sensation; but the experienced captain and the accustomed hands pursue their usual avocations with no apparent disturbance. Gradually one feels the confidence you acquire in that more dangerous machine, the railroad car. At last the Lachine Rapids are reached, the turmoil around you approaches; even to the eye acquainted with the sight, there is more than usual danger; the perils past are forgotten, and all assemble in breathless attention. Ah! look up at the English captain; he is in front of the *two* pilots at the wheel. His countenance, though calm, bespeaks an anxious thinking. "Gentlemen *must* not stand there, they interrupt our view." Then there is cause for care at least, and all silently obey. One passenger, used to the voyage, assures the ladies, wrapped in profound silence, that it would be impossible, even with steam on (and the paddles are still busily pushing us forward), to get the boat out of the well-known channel. One more lurch, and we are safely launched out of the Lake St. Peter, and hurrying our way past the residence of Sir George Simpson, late Governor-General of the Hudson's Bay Company, and who visited their vast possessions

once every year. What a lovely site; what a world of moving, fresh, brimming water to gaze on by sunlight and by moonlight, in storm, in ice, in snow. Ah! young Englishman, scion of some old house at home, airing your Greek and Latin in the New World, what think you of this? "Think," is the reply, "why I have had the most glorious sport in the world, I have *shot the rapids!*" That *could* not have been *all* he felt, but that was all we cared to hear. Would you worship at nature's own most attractive shrines, visit Niagara leisurely, and *descend the St. Lawrence*. Would you *study* nature, buy an island in it, and there feel your own insignificance; your stay would be lonesome mayhap, but you might feel what Chateaubriand describes as the most agreeable sensation of his hero's life; when, among these scenes, he simply exclaims, "and I enjoyed a *night amid the magnificence of the New World!*" One would enjoy to the full that life's capacities will admit, a night *here*, with the moon in half shadow, the mind one long poem, and the heart's thoughts in heaven.

How one would like, too, to have the Lachine Rapids at the foot of one's garden, and the ocean on its front. The gardens we love so much would yield in interest to the ever active, varying and beautiful scene; but we might discover that *happiness* after all, if it be to be found, is in that to be cherished spot, the mind, alone. These scenes, these fairy spots, are, however, so beautiful, so entirely those of enchantment, that ever afterwards,

In vacant or in pensive mood,
They flash upon the inward eye,
Which is the bliss of solitude;
And then my heart with pleasure fills,
And dances with—

not Wordsworth's "daffodils," but with the *rapids of the St. Lawrence*. All who have seen them may well exclaim, "And we too have been in Arcadia!"

Having passed Montreal (described in our last), the voyage to Quebec, being of less interest, is performed partly in the night. The majesty of the river, before and after it passes out of Lake St. Peter, is less striking, and the imagination is so full of the beauties of the rapids, that we may be excused for coming at once upon

Quebec.—A walled city will long, we trust, be a novelty to our people; but it is a curiosity, and this sight alone would repay a visit. Historical interest of no common kind attaches to it, but our business is with its surroundings, which space compels us to make brief account of.

John Gilmore, Esq., has a large and beautiful spot at Wolfe's Cove, so named because it is the scene of Wolfe's landing. Evidences of its former history are displayed in a pile of large cannon balls in front of the piazza, taken from the battle-field. The Plains of Abraham are between the mansion and Quebec, and beneath a fine bluff flows the majestic St. Lawrence, with busy men loading numerous huge ships with lumber and produce, for distant European markets. Mr. Gilmore has everything about him in the best and most liberal condition. His stables are models of extent and comfort. The garden, large and well filled, displays a variety of elegant flowers, fruit and vegetables. As much as thirty bushels of gooseberries have been picked from his bushes in one season. They certainly are remarkably fine. Potatoes are produced here of a superior quality, free from the rot. The planting is excellent. For evergreens, there are the black and white spruce, of great age and beauty. Take the views, the cultivation, and the the extent of improvement, with the refinement within doors, and add the

kindness and suavity of the host and hostess, and every one who visits Wolfe's Cove must come away delighted.

James Gibb, Esq., at Woodfield, possesses one of the most charming places on the American Continent. Thoroughly English in its appurtenances and laying out, its views of the St. Lawrence, its lawns, trees, and superb garden are together a model of what may be accomplished. The whole scene was enchanting. The traveller felt as if he was transported to the best parts of old England, and our whole party united in an exclamation of pleasure and gratification. Here is everything in the way of well-kept lawns, graperies and green-houses, out-buildings for every possible contingency of weather; gardens, redolent of the finest flowers, in which bulbs of the best lilies make a conspicuous figure, and every species of fruit that can be grown. Mr. Gibb is a self-made man, is now President of the Quebec Bank, and a very useful citizen. The traveller who does not see Woodfield has not seen Canada in its best trim.

Thomas Gibb, Esq., at Bellevue, occupies the place originally laid out by his brother James, and is in possession of a house with few compeers. His garden is well taken care of, and eminently beautiful and successful, as are his graperies and green-houses, no less than his peach, nectarine and apricot house. In describing the place, our kind cicerone might well say, "There is everything at Bellevue except dirt." The front view from the house is obstructed by shrubbery and trees, which if removed would add greatly to the effects. Where lumber is so cheap as at Quebec, one need not wonder at the amount of outbuildings we find at all the first-class places. They furnish sheltered occupation for the long winter months. The best melons, conspicuous among which is the great Lisbon, and grapes were ripening under glass, the quantity of which is quite astonishing. The drive of a mile or more into the grounds here, is through one of the best avenues in America. It is planted with the native evergreens, white birch, mountain ash, and other good trees; and the road being of excellent shale, it compares favorably with a noble drive in Europe. We must not omit Mr. Gibb's large collection of the choicest standard roses; these are very superb and well-trained. Many of the newer and rarer plants, described lately, are found here.

The St. Foy and Carouge Roads reveal a succession of excellent mansions, with well-kept grounds. We can only name those of *William Atkinson*, *Henry Burstall*, and *William Price, Esqs.* Suburban residences of great beauty are met with at every turn. New roads, and streets, and houses are everywhere in progress, and attention is specially given to the garden.

The vicinity of Quebec, on both sides of the river, is well-settled. As you ascend towards Montreal, the country and climate both improve—the summer is a month longer. The first frost is expected at Quebec by the 10th of September, and they are consequently cut off from growing many things that at Montreal are successful; nevertheless, there is much to enjoy. Apples in some situations are abundant.

The Falls of Montmorency are easily reached by a carriage drive, during which an excellent opportunity is presented of seeing the French habitants, and their peculiar houses and mode of life, but these must not detain us. We will, however, look in upon

Dr. James Douglass, adjoining the Lower Canada Lunatic Asylum, of which he is the founder and co-proprietor. Dr. Douglass is emphatically

a man of taste, and of that universality of admiration for the beautiful which makes a country home like his a perfect thing. Evergreens of great beauty and considerable age, make the first impression; next, a mansion eminently well-furnished with all that Europe can sell, including books, statuary, mosaics, &c., is ensconced between a first-class conservatory, with the plants in the ground, on one side, and a noble grapery on the other. The view from the drawing-room, through two plate-glass doors, struck us as the finest thing of its kind. The rarest plants in full perfection, the best runners mounting the roofs, and fuchsias, twenty feet high, in perfection, gave an air to the place beyond describing. Altogether Dr. Douglass deserves the highest award of admiration for what he has accomplished, in our power to bestow. *Note*.—In all such establishments, one may be allowed the expression of satisfaction always to see the *Horticulturist* a valued drawing-room guest.

The Lunatic Asylum contains nearly five hundred patients; so well conducted is it, that it is patronized by the State to the number of about two hundred. Everything that alleviates misfortune is here applied; modern science and practice are so thoroughly combined, that not a single patient was under restraint. The place is as clean and neat as any hospital in the world.

Up to this point, and still further into New Hampshire, every public table has been supplied with abundance of the small wild strawberry. It is good, but not equal to the cultivated kind, which in time will be more plentiful. The ample native supply seems to discourage cultivators from attempting the sale of improved varieties, but they must and will introduce such as the Albany seedling. Mr. William Brown at Montreal is successful with the improved varieties.

It would be unjust not to record the very kind attentions of *Edward Glackmeyer, Esq.*, himself a good horticulturist, and the esteemed President of the Association of Lawyers, who gave us his time unstinted to the examination of Quebec and its neighborhood.

The White Mountains.—Dr. Gray, and a party of geologists and botanists, were encamped on Mount Washington, pursuing their interesting studies. At the Glen House, July the 10th, snow was visible on some of the higher peaks; while the citizens of New York were groaning with the hottest night, the visitors and guides were glad to cower over a good fire in a wood stove. It is not within our compass to enter upon the description of these mountain scenes, and we must proceed, still on the Grand Trunk Railway, to

Portland, Maine.—"The early bird catches the worm," is a maxim so old that it needs not to be enforced. Canada is making extraordinary exertions to secure the commerce of the ocean and the north-western trade. She is nearer to Europe than we are, has a broad-gauge railroad to tide-water in her own territory, which is continued to Portland for winter use, no less than summer; it has government aid (as the Horticultural Society has), and altogether it becomes a question whether, with the Galway steamers, we may not see some great diversion of freight and passengers from the old routes. Portland is to be the Southampton of this country; with greater rapidity of transit from London to Galway, and from Portland to Boston and New York, than can be attained on the ocean, the earliest steamers' news, at all events, must be expected via Galway. If the Great Ship now makes her appearance in the deep waters of Maine, there may be a revolution;

the shortest time and the least sea-sickness will carry the day. A few hours after landing brings the passenger to Quebec or Boston, by a species of locomotion on land preferred by most people, especially the *fast* American. New York must look to her honors; though, indeed, there will surely be business enough for all. We were assured that heavy goods are now shipped to Chicago from New York, via Portland and the "Grand Trunk." Look forward to this road extending to the Fraser River settlements, and the wealth of the Indies pouring through the avenue! There are people alive who may see it. What may not Portland then be? The two wharves for the Leviathan, one for each end, are completed by the liberality of the Portlanders.

The noble elm trees are the theme of every one who visits Portland. They are everywhere, and overshadow and meet across some of the widest streets. Such specimens and such numbers we have never before seen. Graperies and green-houses adorn this most beautiful of American cities. New houses and modern palaces are rising, to evidence the prosperity of this interesting place.

Hon. John M. Wood has a very remarkable structure devoted to flowers and grapes. It is in the town, the whole grounds comprising about two acres.

Hon. J. B. Brown has an elegant grapery and green-house, probably not equalled in the State. He possesses about ten acres devoted to horticulture and agriculture. It is a new place, but most promising.

Hon. J. S. Little has about one acre, with grapery and greenhouse, within a very showy and richly planted place.

T. C. Hervey, grapery and green-house in progress. This is a beautiful estate of five acres.

Hon. William Willis and *George Jewett, Esq.*, have also graperies.

Warren Sparrow, about one mile from the city, has some twenty acres under cultivation, with an excellent orchard, grapery and hot-houses. We might enumerate others, but must hold our hand till a future visit offers more time for minuter inspection.

Homewards.—The ride from Portland to Boston offers glimpses of many good towns and settlements, but a rail car does not afford opportunities for inspection, much less for description. From Boston to New York, via Springfield, the route should be all that a traveller could desire, but was materially marred to us by a patent ventilating car, out of order. The truly uncivil conductor declared he knew nothing about it, and seemed to have no duty to perform but to demand uncivilly his "tickets." Every person within the dismal car was rapidly covered with cinders and dust, from which there was no attempt even to deliver us, though a clean and comfortable car was attached behind, and nearly empty. The only cry was for our tickets, with a careless, nonchalant air, from Conductor *Baker*, who would be pleased if his conduct was represented. This was respectfully done to the President, *Pond*, who gave the document to *Baker*, to answer! and future travellers may now know what to expect in the Springfield cars, and avoid them if they choose. This was the first and last incivility and indignity in a journey of thousands of miles. We record the general attention of the railroad people with pleasure and the contrary with regret, and without any hope of reforming this monstrous abuse. The President resigning to his servant all answers to complaints, apparently can not wish to make a change for the better, for the advantage of his customers.

GIGANTIC GRAPE VINE.*

Much has been written regarding the sizes and ages of trees, and it is certainly a most interesting topic. Measurements of the largest vines in America we have rarely seen; as a contribution, or beginning, we present a portrait of a native vine, as drawn, at our request, by a most accomplished gentleman and scholar, the late Doctor Samuel George Morton, the celebrated ethnologist, and called in Europe the Humboldt of America by Lepsius and others.

We first noticed this grape vine in the *Horticulturist*, vol. 1, 1847, page 530, as follows:

"ENORMOUS GRAPE VINE.—I have lately made an excursion to Burlington, New Jersey, for the purpose of obtaining the exact measurement of the most extraordinary grape vine I have ever heard of. It stands on a farm called *West Hill*, the property of my late brother, two miles from the city of Burlington, New Jersey, and the truth of what I am about to relate may be readily verified, though in print it may really seem incredible. At three feet from the ground, it measures *six feet one inch* round the trunk, and at ten feet high it is positively *three feet* in circumference! It is a native male grape, and has been the wonder of the neighborhood as long back as the memory of man reaches. It is still healthy, and its giant folds run over and cover four trees, one of which is a full sized black oak, and the others are quite large.

"The casual reader, as he glances over these unusual dimensions, scarcely realizes the enormity of this vine. Let us try, if we can, to make it comprehensible, by a comparison or two. A string six feet one inch long will enclose two tolerably corpulent people, and these dimensions are as large as a good sized washing-tub. You may thus form an idea of its great growth. This vine grows near a springy soil, on upland, its roots no doubt penetrating to the water. May not this teach us a lesson, to give the rootlets, wherever it is possible, access to a spring or running water. It may be a question, too, whether we do not cut down our vines too much. I observed frequently in England that a whole house was devoted to a single vine, generally of the Black Hamburg, and I think they uniformly bore the finest grapes. To carry a single vine over a large graperly would of course require several years of judicious trimming and management."

The dimensions now do not materially differ from those of 1847. In May last it was measured with the following result: Two feet from the ground it measures 6 feet 2½ inches in girth; four feet high it is about six inches less; it there divides into two branches, the largest of which is 3 feet 3 inches in girth, and the smallest is 34 inches. The largest of the trees which the vine covers is 10 feet in circumference at 2 feet from the ground. The vine is very much decayed, but still puts forth leaves and young shoots. It has never borne a grape in the memory of a lady in the neighborhood, now 98 years old, and who has lived her long life within sight, or nearly so, of this gigantic production, and to whom it was a wonder in her youth. The largest tree is a black oak, the others are black or sour gum.

On pacing the circumference covered by the branches, it was found to exceed 100 feet.

* See Frontispiece.

Vines are recorded of the known age of 600 years. Statues have been carved from grape wood, and pillars made from it; even the large doors of the Cathedral of Ravenna are made of the grape tree. In some parts of Italy, says Miller, a vine is considered young at one hundred years, "and there are plants in existence which have been cultivated 300 years."

Have our readers any greater American vine to record than the one figured?

ORCHARD HOUSES.

It is but a few years since when one had only to plant a peach, or nectarine, or plum, and be quite certain of obtaining the fairest and finest fruit; and we were accustomed to look with great compassion upon our Anglo-Saxon brethren across the sea, who were compelled to resort to walls and espaliers to raise any fruit at all.

The tables have now turned, and the English find far less difficulty in raising the stone fruit than we do; in fact, throughout the largest portion of the United States nectarines and apricots are hardly known, and peaches and plums are becoming so scarce that presently we shall "see their faces no more."

Of late years the extension of the yellows, borer and curculio has become so great that it is hardly worth the labor to plant the trees, for the most active attention produces the most meagre results. In most country places on the Hudson River no nectarines or apricots have been cultivated for some years, and most of the plums and peaches are cut down and not allowed to cumber the ground any longer. If there are remedies for these afflictions, the doctors at any rate have not found them out, and though we have many theories for the yellows and remedies for the curculio, yet we are satisfied there is nothing yet discovered that for general purposes is at all available. The white-washing process is extremely tiresome, for the labor of several days is most often washed away by a shower of five minutes; and if the shower comes late in the afternoon or at night, a great deal of fruit is stung and much damage done before the white-wash is renewed the next day, and you are always liable to the same difficulties after every rain.

The second method, of picking up the stung fruit morning and evening, after shaking the trees, is not a whit more effectual, unless the whole country should all agree to do the same thing, because when you have destroyed your own curculios, you are not the less free from the visitations of your neighbors'.

Under these circumstances, with an impossibility of growing the stone fruits out of doors, the question is now universally asked, "How can we have peaches, nectarines and apricots again?" and the answer is, by means of what the English call orchard-houses, which are now very generally getting into use in Great Britain, and can be put up there, and we suppose here also, at comparatively little cost. A writer in the English Gardeners' Chronicle, 15th May, 1858, estimates the cost of an orchard-house, 30 feet long, 12 feet wide, 9 feet high at the back, and 3 feet three inches high in front, to be about £13 or \$65, in which all the stone fruits are cultivated with the greatest success, in 13-inch pots.

Some orchard-houses have been recently erected on the gardens at Whitehill, in England, which are arranged as follows: The 1st house, 3 feet by

16 feet, is planted with plums, cherries and pears (standards), with the same varieties in pots, set upon the ground; 2d house, 40 feet by 10 feet, planted with standard apricots and plums; the 3d, 32 feet by 20 feet, with vines and figs in pots, set upon the ground; the 4th, 36 feet by 22 feet, and 18 feet high, planted with standard peaches; the 5th, 32 feet by 20 feet, planted in vines; 6th, 40 feet by 10 feet, planted in pears, and the same kind of tree in pots set on the surface. All these houses are span-roofed, ventilated at top and bottom, heated by hot water pipes. The range is glass on all sides, to within 2 feet of the ground.

The trees in pots were only planted the previous year, and the number of fruit set on each were as follows:

Pears.—Knight's Monarch, 174; Bon Chrétien Fondate, 84; Louise Bonne, 76; Williams' Bon Chrétien, 69; Marie Louise, 95; Duchesse d'Angoulême, 64; Glout Morceaux, 112.

Plums.—Green Gage, six trees, averaging 170 each; Angelina Burdett, 300.

Cherries.—May Duke, 12 trees, 370 each; Elton 275; Bigarreau, 215.

Peaches.—Noblesse, 86; Bellegarde, 80.

Nectarines.—Hunts' Tawny, 78; Violette Native, 84.

Apricots.—Moor Park, six trees, 90 to 100 each; Peach Apricot, 70; Breda, 70 to 80.

The peaches and nectarines, as standards, 60 to 70 each.

Apricots, standards, 20 to 30 each. Plums, 70 each.

In the United States, there are not, as yet, to our knowledge, any houses erected distinctly for this purpose, and with the uncertainty of our climate, the tendency of nectarines and peaches to the yellows and borer, and the singular affection so peculiar to apricots, with which a tree, apparently in the fullest health, is suddenly stricken down, we should doubt the advisability of planting standards; but, instead, we would recommend pot culture, which we have tried in a simple green-house for some years back, with the greatest success. Any of the stone-fruits planted in the spring in 3 gallon (11-inch) pots, and transplanted the succeeding autumn into 5-gallon (13-inch) pots, for fruiting, will produce blossoms and fruit the succeeding year, if properly managed; care being taken to admit plenty of air when the fruit is setting, and not to allow the plants to get dry at the root when the fruit would be apt to fall. The trees should be planted in very rich compost, especially when bearing, and well packed in. A system of top dressing is also of the greatest importance, to enable so small a plant to carry such a large quantity of fruit to perfection. For this purpose, a thick layer of old, well-rotted manure, of the strongest character, should be kept on the surface of the pots as mulching; a few pinches of guano occasionally scattered over this would not be amiss. This top dressing not only prevents evaporation—for it is of the utmost importance to keep the roots moist when the plant is in full vigor—but the products formed from the decay of this dressing, when washed down by the daily watering, conveys to the roots just the character of food most proper for them.

Trees planted and treated in this way, only three or four feet high, last many years, affording the most gratifying returns, and can, in case of accident or death, be very easily replaced: whereas, when a tree, as a standard, trained against a back wall or trellis, is lost, a serious gap is made, and many years are required to replace the damage.

So satisfied have we become that this is the cheapest, in fact, the only way now to grow, or rather fruit, peaches, apricots and nectarines, that we have converted a double curvilinear-house into an orchard-house, 70 feet by 20 feet, and 12 feet high; erecting a platform in the centre, the whole length, which is sufficiently wide to accommodate one row of trees. On either side are two other platforms, each wide enough for two rows of trees, thus enabling us to grow and fruit about 250 trees of the different varieties, which always produce a great quantity. We have introduced hot water into this house, for the purpose of forcing a little, so as to secure the setting of the fruit and its reaching some size before the appearance of the curculio, which is sometimes found inside of fruit-houses, having passed through the ventilators. By keeping your potted trees in a cellar, or back pit, or, in fact, any place where they are not severely frosted, and by introducing them by tens and twenties once every 7 or 10 days into the house, from the 1st January, or later, the season can be very much prolonged, and there is certainly no cultivation so simple producing greater results, or one, we think, which will be more generally adopted when known, even by those who only can afford the least expensive kind of house. WODENETHE.

NOTES ON NEW AND RARE PLANTS.

BY DANIEL BARKER, SPRINGFIELD, MASS.

Clematis Lanuginosa, var. Pallida.—One of the most beautiful half-hardy climbers yet introduced. It is very remarkable for the immense size of the flowers, measuring from six to ten inches in diameter; a small plant now flowering here has one flower, fully expanded, eight inches in diameter. Its habit is very similar to Florida, and will, therefore, be admirably adapted for trellis work, verandahs, and other similar structures. In the Southern States it will undoubtedly prove perfectly hardy, and will be a most valuable acquisition wherever climbing plants are grown.

Ipomea Hederacea, Superba Grandiflora.—A splendid addition to the genus Ipomea. Flowers very large, light blue, with a beautiful white border. This beautiful variety is well adapted for summer duration in the conservatory, or upon trellis in the open air. Annual.

Cereus Bonplandii.—A large, high-flowering Cereus. Flowers which have lately expanded here measured twenty inches in diameter. It is a most attractive thing when in bloom, but remains in perfection only a few hours.

Dianthus Albo Nigricans.—A fine garden variety, and a very useful plant for forcing in the early spring months. Flowers dark maroon, edged with white, and remarkably fragrant.

Hebeclinium Janthinum.—A very beautiful, free-flowering stove plant, bearing large trusses of bright lavender ageratum-like flowers, which remain in perfection for several weeks.

Fuchsia Souvenir de Chiswick.—A splendid variety of this elegant genus. Tube and sepals, light crimson; the corolla a beautiful dark violet, reflexed quite back to the seed vessel. Flowers very large.

Fuchsia Catherine Hays.—A very fine variety. Sepals and tube light scarlet; corolla a beautiful light blue; sepals very finely reflexed.

The flowers of the above two beautiful varieties are of a very improved

form and substance, rendering them very desirable kinds for the greenhouse or open air culture.

Gloxinia Erecta, Alice Louisa.—A very ornamental variety of the erect flowering gloxinia. Centre of tube pure white, with circle of bright crimson extending three parts of the way up the sepals.

Gloxinia Erecta, La Belle Jane.—A very large and beautiful variety. Tube pure white; the sepals suffused with bright, delicate carmine and rose. Quite new.

HYBRIDIZING FRUITS.

BY T. M.

I AM very glad to see, Mr. Editor, the prominence your valuable journal gives to such interesting subjects as that of Mr. W. N. White, in your August number. It would not become me, as a practical man, to depreciate the value of mere practical articles; they are highly useful and very instructive; but, at the same time, if ever our profession is to rise to the dignity of a science, it is essential that we should be able to give a reason for all things. With practice on our right hand, to observe and to do, and on our left theory, to investigate and arrange, we may hope to arrive at just conclusions much earlier and easier than by either alone.

I am one who has hitherto had great faith in the efforts of the hybridizer to ameliorate our fruits, as they have already done the beauty and interest of our flowers. Mr. White's paper, tending to show the impossibility of such improvement, is so ably and forcibly written, that I am afraid it will induce many projected experiments to be abandoned. I think such a result is to be deplored, and I would like to offer a few suggestions, *per contra*, to his remarks.

My greatest objection to your correspondent's conclusions is, that they are for the most part derived from the observations of authors who wrote when the art of hybridizing was in its infancy. Mr. Knight, Gaertner, and others, with their leisure and love of the subject, had they lived to the present day would probably have come to different conclusions than their first experiments warranted.* Decandolle, Gray, and the other authorities quoted, are indeed still living, but their quoted works are either of some years' standing, or their ideas founded on Knight's, or other parties, ancient experiments. One authority quoted, for instance, Dr. Lindley, has more recently asserted (*Theory of Horticulture*, p. 691), "but facts prove that undoubted hybrids may be fertile." Since the doctor wrote that, we not only have learned that hybrids *may be*, but actually are fertile. I have at the present writing, seedlings of the Veronica "Imperial blue," a variety three, four, or more generations removed from an original hybrid between *V. Speciosa* and *V. Lindleyana*, or *Salicifolia*. I have raised a brood of Fuchsias, between *F. fulgens* and *F. longiflora*, two species as widely distinct as it is easy to suppose any specific terms to characterize; and from some of this progeny again to reproduce seedlings, though I am bound to admit some of them produced berries with great difficulty. So, also, other parties have had the same experience.

* Even ten years ago it was thought that Orchidacea did not perfect their seed. Every experiment to raise them failed. Now they are not considered difficult to raise, and even to hybridize, not even genera standing in the way, as a hybrid is recorded between *Epidendrum aurantiacum* and *Calleya Skinnerii*.

The different species of tropical *Begonias* have been found to hybridize together so easily, and their progeny again to hybridize and reproduce, that it is impossible to foresee where it is to stop. The same may be said of the *Bouvardia* and *Achimenes*. In the latter case, indeed, it is not only difficult to decide which is a species, the genera themselves seem lost in the confusion. Hybridizing has, in fact, quite swamped *Sinningia* into *Gloxinia*, and since the introduction of the Central American species of *Achimenes*, it is hard for a systematic botanist to go into a good garden collection and fix which genus of gesneracea some of them may belong to.

Systematic botany, though it may be termed a "natural system," is purely a work of art; and if we "could without limit produce crosses," it would not so much break up the "orderly arrangements of nature" as it would, perhaps, the systems of Lindley, Decandolle, or Gray. It is not yet agreed upon what constitutes a true species, and genera are confessedly artificial. If two species, so called, will not intermix, they may in time come to be considered as of different genera. In the case of the gooseberry and currant, for instance, which Lindley could not intermix, some botanists make distinct genera, calling the gooseberry section *Grossularia*, and the currant *Ribesia*. The progress of horticulture has quite broken up the old theory of a species, namely, that it was an individual form by which "like could be again reproduced from like" as we now know that varieties of both form and color can, with a very little care, be again reproduced from seed, and after one or two generations becomes as permanent as the species it originated from, reproducing as exactly "like from like."

Many of Mr. W.'s objections as to what has not been done are not conclusive as to what may be. For instance, that diœcious plants should in Lecoq's time be found less easy of hybridizing than hermaphrodite ones, may be that so much attention may not have been paid to them. Quite recently we find an hybrid amongst the Pinacea, which we should suppose, from many circumstances, much more difficult to realize than in the grape. The *Thuja meldonensis* is said to be a hybrid between *Juniperus Virginia* and *Biota Orientalis*, two very distinct genera, and any one who has seen it growing will not for a moment doubt the fact. Whether it will also produce perfect seeds or not I am not aware.*

It is scarcely parallel to illustrate the subject by the mule in the animal kingdom. We can readily suppose that in the animal department of the organic portion of nature, the structure is so very complicated, and so much more perfect, as to place many more checks to variation from normal types. Animal nature is not so easily affected by cross-breeding, or any circumstances, as a plant is. We may look in vain among animals for anything like so great a change in appearance, by any amount of "cultivation," as that process has made on the cauliflower, for instance, which has been "improved" from a wild plant, more resembling the common mustard in appearance than anything else.

I think Mr. White's quotation that Mr. Knight could not get the Duke and Morello cherry to hybridize, is an error. If I am not mistaken, he succeeded in the union, but the progeny did not seed, though they flowered freely. This, and the few other cases on record of experiments with fruits, does not certainly give great encouragement, but on repetition, under other circum-

* One of our best practical living botanists, Mr. Charles J. Wister, of Philadelphia, has assured me that in his neighborhood *Juglans cinerea*, *J. regia* and *J. nigra*, the black, white and English walnuts, hybridize together, and that specimens of the hybrids bear fruit near him.

stances, might do better. Many experiments fail, that with a slight variation have after all succeeded. The art of hybridizing is ill understood; every day new facts are being developed. It is but quite recently asserted that two plants, hybridized when in a high state of culture, under glass, do not produce the same progeny as the same plants, comparatively neglected, hybridized in the open air; and that the more artificially the plant is treated the more easily can the hybridizer operate on it. And this is but one of many facts that may yet have considerable influence in the progress of the art.

No one will contend for the superiority of cross-breeding over mere improving, but if it can be effected it would be a natural step towards improvement. By crossing a pound pear with a seckel, we should "mix" the flavor of each in the progeny. The pound pear would thus be produced a little smaller perhaps, but something towards the flavor of a seckel, and by saving the seed of the finest of these seedlings (providing, of course, they proved to seed freely,) for a few successive generations, a late, large pear, with a seckel flavor, might be produced.*

I trust that the hybridizers will still continue their experiments. The native and foreign grapes are botanically very closely allied, much more so than the gooseberry and currant, raspberry and blackberry, or the apple and the pear; and they may, like species of fuchsias and veronicas, hybridize and prove fertile, and from this progeny improvements may again arise; but if not, we shall learn something which, even as knowledge merely, may be of great service to us in other affairs.

GRAPE BORDERS.

BY WILLIAM CHORLTON.

THE observant remarks, and questions asked, respecting the culture of grapes, by your correspondent S. Miller, in the June *Horticulturist*, reminds us that established rule is not always a sure guide although it may be the best in the majority of cases.

As to trenching, when rightly performed, and also a moderately rich soil, we have demonstrated fact of the good and permanent effects, but this does not assist any argument in favor of deep and over glutted beds for the roots. With regard to the roots creeping "between wind and water," as he intimates, the cause is clearly seen if we take a right view of the subject. No plant feeds directly upon a mass of undecomposed matter, however rich it may be as a compound, but does so from the liberated elements in a gaseous state and different proportions, in combination with water. The stratum through which the network of fibres has to penetrate need not of itself contain originally the required pabulum for permanent nourishment, but should always be of such a character as to enable them to penetrate through it in search of the required nutriment. Consequently a proper matrix, even though it be deficient in fertility, is, so far, better than an improper one that is gorged to repletion with what, under other circumstances gradually administered, would support the most healthy action. We may admit that according to the different constitutional properties of distinct

* The fine race of Pine Strawberries is, if my memory serves me right, the result of Mr. Knight's experiments in hybridizing the Surmum with the Chili.

genera the soil needs to be of various mechanical textures, and to a certain extent composed of different chemical combinations, but this does not alter the subject. We may preach as much as we like about our superior skill, yet, depend upon it, if we do not copy from nature's best workings we only grope in the dark ; now we find her invariably giving fresh material from above, the decay of surface vegetation, the falling of leaves from the trees, and, no doubt, the percolation of carbonic acid from the atmosphere down and into the soil ; these two former compose a covering of material for the protection of the roots, and all three are eventually resolved into suitable food, and in proportions as may be periodically required. Again when the land is well drained, either naturally or artificially, there is always a capillary attraction going on, excepting during severe frost or rain, which draws the moisture upwards. From this we may readily perceive why mulching is so beneficial provided it contains the required elements, because decomposition is continually at work immediately beneath, and where the oxydizing and liquifying properties of the atmosphere and water can act, and furnish to the spongioles their just need, while they, obeying the law of self preservation, follow, the same as an animal by instinct, and increase proportionately.

It is high time that we begin to discard all such set notions as glutted and deep beds for the grape vine ; they belong to an age of nostrums, dogmas and ignorance. The reiterated recommending of such things has done more to retard the successful cultivation of this plant than all other mischievous pretensions put together. In my Grape Grower's Guide I have endeavored to break down this evil system, and in my own practice even for the glass grapery, the borders are not sunk more than eighteen inches below the surface, neither are they made more than in a medium way rich in fertilizing matter ; but each season there is applied a good dressing of half decayed leaves and vegetable refuse, mixed with a portion of barn yard manure, by which the roots are kept near the top, and absorb the whole of the annual dressing during the season.

Your correspondent further suggests, that in connection with mulching, "less trimming" would pay better. I believe we have ample evidence in the truth of this in most instances as the thing is too often practised, but the experience of all good cultivators tends to show that a judicious shortening, and thinning out of a portion of each season's growth, so as to allow a continual increase of surface, is of service, and improves the quality of the fruit ; while on the contrary we have many examples of untimely imbecility in many grape establishments which testify of the injurious effects of the stumping in systems that are frequently adopted. I have for many years contended against this barbarous principle, and am glad to see it mooted. In addition to the importance of pruning, is a proper care for the healthfulness of the foliage ; no fruit bearing plant will ripen first quality produce, when these are deficient in quantity, or become prematurely injured.

My experience advises, to make the basesoil fertile, but not too rich or deep. Drain below, and mulch above. Let the head gradually cover more surface, but shorten in a portion. And, above all things, endeavor to keep the *leaves healthy* and in sufficient quantity to *shade the fruit* from the sun.

THE HONEY PEACH.

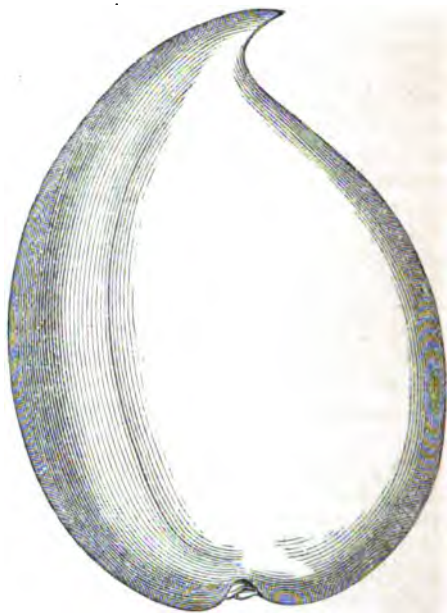
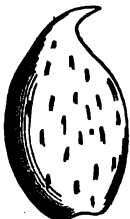
WELL may this fine fruit be termed the "Honey," as it is, undoubtedly, the sweetest of all peaches.

Its shape is very peculiar, being a long oval, with a sharp, recurved point at the extremity. The stone is of the same shape, having also a long, sharp curved point. The fruit measures about three inches in length, by about two inches in diameter. The color of the skin is a light green ground, mottled, waved and striped with deep crimson, gradually fading into pale red.

The flesh is very fine, tender, juicy, with some red veins, mostly around the stone; not very high flavored, but of a peculiar, most delicious, honeyed sweetness. It is a perfect freestone.

The tree is a very vigorous grower, very productive, and perfectly hardy, many young trees two years from the bud, in the nursery rows, having yielded from two to four peaches this season.

The leaves are small, resembling a very ordinary wild seedling, with small globose glands, some times hardly perceptible.



HONEY PEACH.

The season of ripening at the South is from the middle of June to the 1st or 10th of July. It is a seedling from Peach stones brought from China some years ago, and planted by Chas. Downing, Esq., who sent grafts to Henry Lyons, Esq., Columbia, S. C. The graft put in by Mr. Lyons was the only one which survived, Mr. Downing's seedlings having all failed. The original tree is still in Mr. Lyon's garden, and in good condition, and will, we learn, be propagated by Messrs. P. J. Berckmans & Co., of Augusta, Georgia. Mr. Lyon takes great interest in horticultural pursuits. He is in possession of the original Herbe-mont grape vine, still growing in his own fine garden, planted by Mr. Herbe-mont, years ago, and yielding a most delicious fruit, small, but perhaps superior to any native Southern grape.

INSECTS UPON THE LARCH—WHAT ARE THEY?

In passing a fine young larch a few moments since, I discovered the first appearance this year, of an insect which has infested the same tree for the two previous seasons. It is a small, downy bug, about the size of a pin's head, resembling somewhat a very small mealy-bug, but instead of fortifying

itself in the axils of the leaves, as is the custom of the latter pest, it is spread abroad upon the young leaves, which are just attaining their growth. The tree does not appear to be injuriously affected by it, but has a very unsightly appearance, being, before their disappearance, (which will take place in a few weeks,) quite studded over with these white specks, and looking somewhat as if it had been exposed to a small snow storm. What is the insect and the remedy?

A few years since the same, or a similar insect, appeared upon the balsam firs, of which there are some fine specimens in the vicinity, and infested them to such an extent, that the branches most affected were quite whitened with them. Of late years I have seen none of them, however, and am inclined to think that they disappeared as they came—on their own responsibility.

June 25th.

JNO. B. EATON.

SOUTHERN POMOLOGY.

THERE has been a delay in publishing the Ad-interim Report of the Georgia Pomological Society, which we copy below, and shortly we shall insert the report of the annual meeting of the Society, kindly forwarded by the able secretary Mr. W. N. White. It gives us pleasure to see that Mr. Berckmans has been elected to the office of its President. No other man could fill the chair so well.

SOUTHERN FRUIT. — REPORT OF AD-INTERIM COMMITTEE OF POMOLOGICAL SOCIETY OF GEORGIA.

HON. MARK A. COOPER, PRESIDENT: *Dear Sir*—The Committee *ad-interim* of the Pomological Society of Georgia, would further report that the following Fruits have been submitted to them for examination:

APPLES—Ellijay.—Fruit large, rather oblong, somewhat irregular, skin smooth, lemon yellow, with patches of greenish russet, sprinkled with small black dots, often with a bright blush in the sun, calyx closed (?) in a rather shallow basin, stalk short, in a narrow cavity, core large, seeds light brown. Flesh white, fine grained, tender, of mild sub-acid, second rate flavor. From J. Van Buren, Clarksville, Ga. December.

Southern Golden Pippin.—Fruit medium, oblate, skin yellow, brownish yellow in the sun, sprinkled with russet flecks and dots, calyx open in a very shallow basin, stalk very short, in a broad russetted cavity, core medium, seeds dark brown. Flesh yellowish, firm, with a peculiar slightly acid flavor, good. November to April. From Mr. Van Buren.

Pound Cake.—Fruit large, oblate, inclining to conic, flattened at the base, skin dull yellow, pretty much covered with patches of greenish russet, calyx small, open in a small regular basin, stalk stout, very short, in a broad, shallow cavity. Flesh nearly white, firm, of a rich, lively acid flavor. Very good. From Mr. Van Buren. November and December.

Wattagah.—Rather large, roundish oval, narrowing to the eye, skin light yellow, russet at the base, nearly covered with very dark crimson, calyx large, nearly open in a shallow, ribbed basin, stalk short, in a broad shallow cavity, seeds light brown. Flesh white, crisp, juicy of a brisk rich acid flavor. Very good. December and January. From Mr. Van Buren.

Kettegeskee.—Fruit medium or less, form regular, oblate, tapering

slightly to the eye ; skin light yellow, with a few dark dots and specks, sometimes a little russetted about the stem ; calyx open in a shallow basin, stalk slender, in a broad shallow cavity, seeds dark brown. Flesh yellowish white, crisp, juicy, pleasant, brisk acid. Very good.

Logan-Berry.—Fruit large, ovate, somewhat onesided and slightly ribbed ; skin yellow, a little russetted, with a brownish cheek, sprinkled with crimson dots ; calyx large, open in a medium basin, stalk short, in a rather narrow, irregular cavity. Flesh yellowish, juicy, crisp and a pleasant sub-acid flavor. December. From Mr. Van Buren.

Santouchee or Panther.—Fruit large, oblique, inclining to conic, sometimes oblate ; skin smooth, pale yellow, sprinkled with a few brown dots ; and somewhat marked with patches of greenish russet ; calyx large, open in a narrow basin, stem slender, in a deep narrow cavity. Flesh white, tender, with a peculiar but rather pleasant sub-acid flavor ; seeds light brown ; quality good. November and December. From Mr. Van Buren.

Duckett, Equinately, Berry, Bachelor, Maverick's Sweet, Camak's Sweet, Berry, Cullasaga and Nickajaak, were also received, with the above, from Mr. Van Buren. They are among the very choicest of our Southern varieties, but as they are already described in the new edition of Downing's Fruits, a description by the Committee is unnecessary. Some of the apples sent us by Mr. Van Buren, he informs us, were obtained from Mr. S. McDowell, of Franklin Co., N. C. We should be glad if M. Van Buren would give the public the history and origin of each of the above, and indeed all our best Southern Apples, as he is the only person living that can fully supply the desired information.

Thurmond.—Fruit small, oblique, flattened ; skin yellow, washed with red in the sun, sprinkled sparsely with large dots ; stalk small, rather short, inserted in a narrow regular cavity ; calyx large, closed in a broad corrugated basin. Flesh yellowish, firm, moderately juicy, mild sub-acid ; good. January and February. From Peters, Hardin & Co., Atlanta.

Forsyth Seedling.—Fruit medium or large, oblate, inclining to conic, somewhat oblique ; skin of the specimen received, except the cavity, entirely overspread with bright crimson, sprinkled sparsely with large white dots ; stalk small, short, in a narrow russetted cavity ; calyx medium, partly closed in a shallow basin. Flesh nearly white, tender, with a nearly sweet aromatic flavor. Very good. January and February. From Peters, Hardin & Co.

Green Crank.—Fruit large oblate, scarcely oblique, inclining to conic, flattened at the base ; skin greenish yellow, dotted and partly overspread with greenish russet ; stalk small, short, curved, in a broad shallow russetted cavity ; calyx closed in a small regular basin. Flesh white, crisp, abounding in a lively acid juice. Very good. December to March. From Peters, Hardin & Co. This and the preceding are excellent apples, and the last is particularly stated to be a productive variety.

Said to be the same as Kentucky Streak.

Bradford's Best.—Fruit rather large, oblong, slightly conic, somewhat oblique, obscurely ribbed ; skin dull greenish yellow, striped with dull red, sprinkled with black dots ; stalk short, in a deep narrow russetted cavity ; calyx closed in an abrupt basin ; core large. Flesh white, tender, moderately juicy, with a pleasant sub-acid flavor, sometimes mealy when over ripe, but in its best state very good. From Peters, Hardin & Co. This apple we learn has been grown successfully the last twenty-seven

years, near Memphis, Tenn. The tree is upright, vigorous and productive. The fruit has been kept at Memphis, until near April, and is there considered the best winter variety. At Atlanta it also promises well.

English Crab.—Fruit small, flattened, oblique; skin yellow, nearly over-spread with dark red, sprinkled with large whitish specks and small black dots, stem medium, curved in a medium sized cavity, calyx large, open in a shallow basin. Flesh deep yellow, tender, with a very mild sub-acid flavor, very good. January. From Peters, Hardin & Co.

From the same parties also were received the Shockley, which is the best keeper we have, lasting without trouble until a new crop of early fruit ripens, and the Limber Twig nearly as fine a keeper; both of these are described in Downing.

Of the apples above described, we believe that if sufficiently productive, Wattaga, Logan-Berry, Pound Cake, Green Crank, Forsyth Seedling and Bradford's Best are worthy of general cultivation.

CHERRIES.—*De Kalb Cherry*.—A fine sprightly, very early variety of the Duke Class, which we believe entirely identical with the May Cherry of this place. The latter was raised from seed, brought by Hon. W. H. Crawford, from Paris. It is a late blooming variety and hence of ten succeeds, as in 1857, when others fail of a crop. Begins to ripen with May. This should be in every fruit garden. From Peters, Hardin & Co.

Bigarreau Cherry, as described in Downing; of this fine specimens were received, May 31, from J. Van Buren.

Fine specimens of the Elton, Gov. Wood and Holland Bigarreau have been grown here, but the trees are generally short lived, and the birds get most of the fruit. Reine Hortense, Kentish, May Duke and Plumstone Morello do better; but the common small Morello succeeds better than any other variety.

All of which is respectfully submitted.

WM. N. WHITE, Chm'n.

Athens, July 1st, 1858.

ANDROMEDA ARBOREA.

BY ALAN W. CORSON, MONTGOMERY COUNTY, PA.

I RECENTLY found several Sorrel trees (*Andromeda Arborea*) growing upon a steep hill, which I estimated at about 500 feet in height, on the south side of the Ohio river, opposite the city of Portsmouth. The greater part of the trees were from ten to twenty feet in height and rather slender, of very luxuriant growth, and several in full flower. The range of the hill is parallel to the river, its top a narrow ridge, in some places but a few feet in width, very steep on the side next the river, probably not varying more than 30° from perpendicular for half the height nearest the top, the soil apparently very dry, the rock where it appears being fine-grained, light-colored, and apparently sedimentary. The trees that were seen grew on the north side of the hill, near to the top (no examination being made further down); probably 15 were observed in 100 yards distance. The latitude of the place is 38° 40', or thereabout, and their growing naturally there at such elevation and exposure to the north, with only the shelter of oaks and other deciduous trees of rather small size, and so thinly scattered

as to afford but slight protection, would seem to render it probable that it may be cultivated in many situations, probably up to 42° of north latitude, with little risk of its suffering from the severity of the cold. As a small ornamental tree, it is very beautiful when in leaf only, and when in flower it is scarcely surpassed by any shrub or small tree in cultivation within the latitudes mentioned. I am aware that there is one, and perhaps more fine trees of this species at the Bartram garden, near Philadelphia, but it occasioned some surprise to find those in the situation mentioned above, and I forward this notice in hope that the attention of cultivators and amateurs may be turned to its propagation and culture, as a beautiful shrub or small tree.

PLAN OF HUNTING PARK,

BETWEEN THE BUILT PART OF PHILADELPHIA AND GERMANTOWN.

BY WILLIAM SAUNDERS, SUPERINTENDENT.

To J. JAY SMITH, Esq.,—In fulfilment of a promise made you some time ago, I now hand you the design for the improvement of the Hunting Park, of Philadelphia, submitted by me in the fall of 1856. In order that the appropriateness of the design may be better understood, I will briefly describe the ground:

Hunting Park is about forty-six acres in extent, of an awkward, irregular outline; surface so flat that the level does not vary more than six feet throughout the whole extent; and, with the exception of about a dozen large hickories and oaks, was wholly destitute of trees or bushes, and so low, with reference to the surrounding country, that no distant views are obtained.

I have purposely omitted all references in the plan, and I may further add that the present engraving has been executed from a very imperfect photograph, which accounts for the indistinctness of many of the points, more particularly the entrance-gates, keepers' house, pavilions, summer house, fountains, &c. I have also materially abridged the description which accompanied the design, as it would be too lengthy for your pages.

W. S.

PLAN OF HUNTING PARK.

"To ascertain principles of action, it is necessary first to consider the end in view."

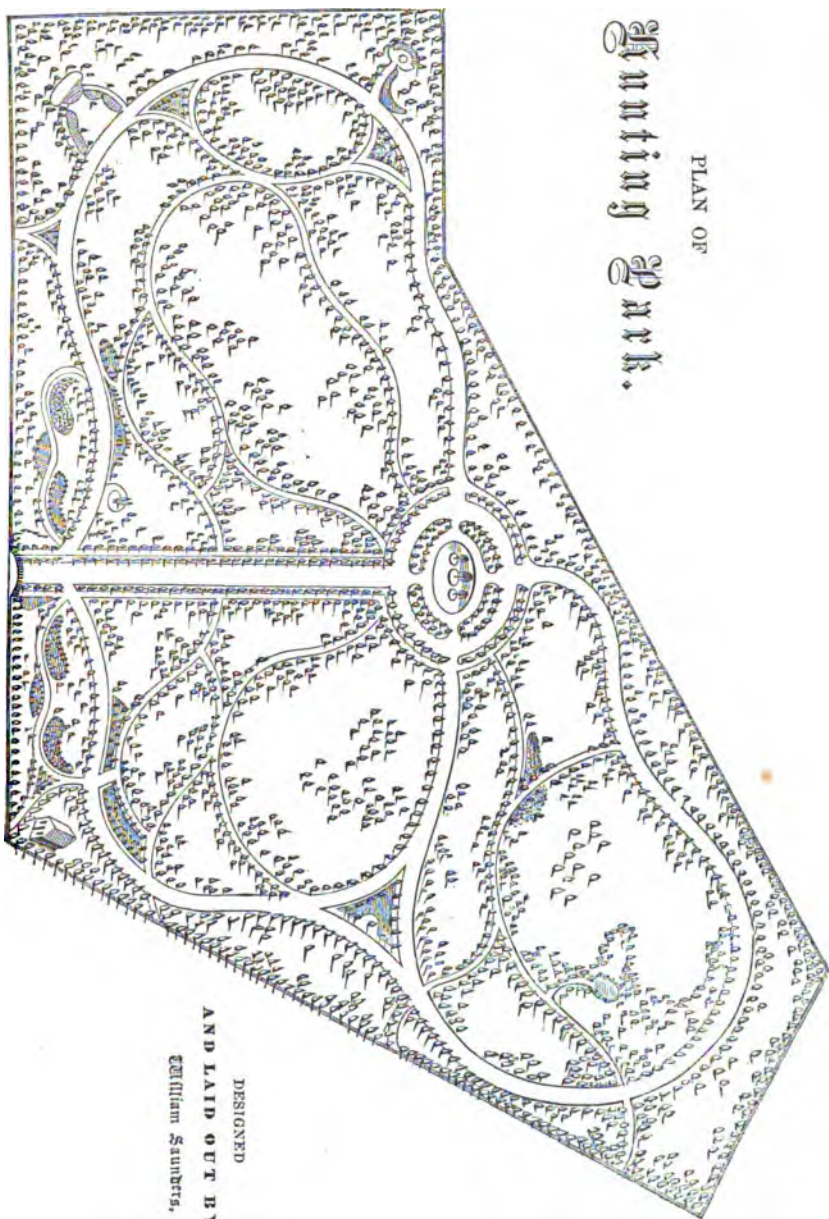
The object of a city park is chiefly to afford the inhabitants means and facilities for healthful recreation. It should, therefore, be provided with ample shaded walks, rendered interesting by the arrangement of natural scenery, and such works of art as are in keeping with the locality.

This park, commanding no distant views, and not having within itself any striking features, it is evident that "variety and interest" must be accomplished wholly by the grouping of trees and shrubbery. Bold or striking architectural features, while they are unnecessary, would also be out of keeping with the situation. All necessary buildings should, therefore, be simple and expressive in design, altogether free from any approach to ostentatious display.

Hunting Park is too limited in extent for the formation of a distinct "Arboretum." This is not, however, much to be regretted, as the planting

PLAN OF
Hunting Park.

PLAN OF HUNTING PARK, PHILADELPHIA.



DESIGNED
AND LAID OUT BY
William Saunders,

may be so varied as to embrace all hardy and useful trees; the same reason may be adduced in reference to a "Botanical Garden." Indeed, under any circumstances, it is questionable whether a garden of this description is fitted for a public park, under city government. These institutions, to be of real usefulness, must be accompanied with lectures on botany, &c., controlled by an efficient professional government. A mere botanical collection of plants, without these applied accessories, would be about as instructive to botanical students as a mere display of chemical apparatus would tend to the study of applied chemistry.

I have not adhered strictly to any particular *style* of landscape architecture. The geometric has been maintained so far as to embody a straight broad avenue, leading to a central feature. There is, perhaps, no style of planting so well adapted for city parks as that which secures a sufficiency of broad promenades. In small pleasure grounds, intricacy and variety is secured by planting thick masses of shrubbery. For various reasons, dense masses of growth and thickets are not desirable in a public park. This plan may be classed as a near approach to what Downing happily termed the "Graceful," and Loudon the "Gardenesque" style of landscape gardening, as distinguished from the "Picturesque;" but no exact line of definition can be drawn between the two modes of planting. While, therefore, every opportunity will be taken to show the full development of individual trees, the effects produced by combination in irregular groupings, and the assemblage of variously formed and colored foliage will also be secured. To the citizen contemplating landscape improvements, and to all desirous of studying the various forms and habits of trees, either as individual specimens for particular purposes, or the various combinations which they form in connection, this would be a place of useful and interesting resort. To further this object, as well as to excite general interest in trees, I propose that specimens of all hardy trees and shrubs, native and foreign, be appropriately introduced, so that the whole Park may be looked upon as serving the purpose of an arboretum; one, too, of a most useful character, and much more interesting than arboretums usually are. In my detailed plans and lists of trees for planting, I have kept this feature of a complete arboretum constantly and prominently in view.

I have not attempted to produce intricacy by an arrangement of tortuous or abrupt curving walks, but the various groups will be planted sufficiently thick, and intermixed with appropriate undergrowing plants, so as to produce a fresh change of scenery at every step, and thus avoid tameness of expression.

In planting parks of this description, the all-important object of shade must to a certain extent modify any style that may be adopted. I have shaded the roads and walks almost continuously on the south and west sides, taking every advantage to prevent monotony in the planting. The smaller walks are shaded with the Norway, sycamore and sugar maples, horse chestnuts, Lindens, and similar round-headed trees, and where one variety of tree is commenced on a continuous line, it should be continued until a change of scenery or branching of the walks gives a reason for changing the character of the trees. The same general principle should also characterize the groupings.

At various points where walks cross or take a similar course near each other, masses of low growing shrubbery have been introduced. These should be planted rather thickly, in ground previously well trenched and

manured, so that a mixture of luxuriant foliage may be produced. If called upon, I will submit my ideas as to the individual arrangement necessary to produce the best effects in this species of planting.

The straight entrance avenue is 40 feet wide; on each side, in the centre of a border of grass 10 feet in width, is a row of the tulip tree (*Liriodendron tulipifera*). This tree is selected for this position on account of its peculiar fitness. It forms a tree of majestic proportions; trunk straight and columnar; foliage large, ample, and of rich green color; healthy, and free from the attacks of insects. It is also peculiarly American in its general character, and distinct from any other tree. Parallel to the tulip tree, is shown a row of the Red Maple (*Acer Rubrum*), selected on account of its various-colored foliage at various seasons—in spring full of scarlet flowers; foliage rich green during summer, changing to a bright scarlet color in the fall, in beautiful contrast with the yellowish color of the tulip at that season. These trees are both of average rapidity of growth.

A carriage drive, 30 feet wide, courses round the park. These roads all meet at the centre. The central portion may be reserved for a fountain, encircled with weeping willows, whose drooping branches will enter into pleasing contrast with the pointed growth of the tulip trees, which will be continued on the outside of the oval broad carriage way.

The space included between the carriage road and the boundary line of the park is to be wholly planted with evergreen trees. The evergreen planting will, at certain marked points, extend further into the interior of the park, but they are in connection with the marginal plantings, and kept as a distinct feature from the deciduous trees; on no account are they to be extensively intermixed, but *blended* into each other by trees of intermediate character, as the Carolina Cypress and larches; this will produce a pleasing effect during winter, when the deciduous trees are leafless: shelter the grounds from the rude blasts of early spring, and impart an "expression" which is never attained by an indiscriminate mixture of deciduous and evergreen trees.

A few of the more important effects to be realized may now be noticed or recapitulated:

1. To form distinct groups of the various species of trees and their varieties, such as the oaks, ashes, maples, &c., and arranging them with reference to their habit of growth, so that the individual groups may form distinct compositions.

2. Planting evergreens with a view of forming a distinct winter scenery, principally effected by keeping them apart from deciduous trees, and arranging them with reference to growth and color of foliage.

3. Gradually to blend the evergreen and deciduous plantings into a pleasing connection, by using trees partaking of the conical form of the former, as the larch, and meeting them with single specimens of handsome trees of both kinds, such as the hemlock on the one hand, and the Norway maple on the other.

4. Placing trees of rare character so that they will be conspicuous and command attention, by planting them in isolated positions where they can readily be inspected from the walks.

5. Planting with reference to the development of individual as well as combined beauty; the former by placing single specimens in prominent situations, the latter by contrasting foliage alone, or the general outline and habit of growth.

6. Giving depth to limited views, by forming curving outlines, and planting the convexities with trees of light colored foliage, and the recesses with heavy, or dark foliage, as the horse chesnut and purple beech.

7. Preserving a pleasing sky outline to all distinct groups, by introducing into the centre such as the Lombardy poplar, and filling up the margins by suitable undergrowth.

8. With reference to producing effect from the coloring of foliage in autumn, principally the dogwood, oaks, hickories, sweet and sour gums, sassafras, maples and tulip trees.

9. To plant the outlines of various groups with early spring flowering trees, in order to produce a cheerful effect, such plants as the Judas tree, dogwood, chionanthus, flowering thorns, laburnum, magnolias, &c.

10. To imitate the pleasing variety of stems in natural scenery, by planting at irregular distances apart, some quite close, to form an appearance of two or more stems proceeding from one root; a pleasing variety will follow such treatment.

Lastly.—To preserve the frequent occurrence of open lawns, in order to relieve and heighten the effect of the plantings; neglect of this will destroy all that the plan proposes to accomplish.

[Mr. Saunders has most successfully treated this level spot, having been selected to lay it out by the councils of Philadelphia, and having the charge of the entire details. He gives in the above paper very satisfactory reasons for what he has done; a few years will show that he has done it judiciously and artistically. Comparatively this is a small park. It was presented by a few gentlemen to Philadelphia, and will become a model for grounds of similar character. Parks are to be great features of the neighborhoods of our cities and towns, and here is one of the best examples of planting to follow.—*Ed.*]

WILSON'S ALBANY SEEDLING STRAWBERRY.

BY DR. G. W. RUSSELL, HARTFORD, CONN.

THE strawberry season being past, it is well to compare notes, and give our experience with the new varieties. Here is mine with the Wilson's Albany. In August, 1856, the plants were put about twelve inches apart, and in rows eighteen inches apart. In August, 1857, four more rows were set, making the whole plot bearing fruit, as measured the other day, eighteen by twenty feet. From this plot there were gathered, between June 17 and July 10, seventy-four (74) quarts, measured, and from eight to twelve quarts, estimated, decayed in consequence of the rain. The greatest amount picked in one day, June 26th, was twelve quarts, and probably four more might have been gathered, as the whole bed was not gone over.

The berries were large, of a fine dark red color, firm and solid. A section of the fruit shows a solid mass of flesh, juicy and well-flavored. They will weigh more, measure for measure, than most other varieties with which I am acquainted. As regards the quality, it is very good, and I should rank it higher than did the late Fruit Growers' Society, at Rochester. In 1857, I thought the fruit was rather acid, but this year it was less so. It is *very* productive, according to my experience, and promises to take a high rank amongst the new varieties.

I admit that the rows were too near together, and the plants too crowded,

but, by care, the berries were well exposed to the sun, and were well colored.

In November, I covered well with horse-manure and litter, taking care, however, not to bury the plants. In the spring, if any of them did not readily make their appearance the straw was pushed aside, and a chance given them to show their heads. The manure and straw was not raked off. When the grass about the garden was cut, it was placed between the rows, making a complete covering for the ground, a fine mulch, and a nice, clean bed for the berries. Perhaps this variety needs mulching, to keep the fruit clean, for the fruit-stalks are not always long, and are generally bent down with the weight of the fruit.

Since the gathering of the fruit, I have dug about three or four inches in depth between the rows, the straw and grass being sufficiently decayed, and some of the old leaves and all the runners having been previously removed. I have now thoroughly mulched the ground again with grass, shall keep the runners cut, and in November shall treat as before.

The ground was thoroughly turned over in May, 1856, to the full depth of the spade, and *well* manured. Before putting out the plants in August, it was again spaded. The plants had a good dressing with wood-ashes last year, and will get another in about two weeks.

The time and labor spent upon this small plot was considerable, but was well repaid.

AROUND CINCINNATI, OHIO.

MOUNT WELCOME, August 6, 1858.

J. JAY SMITH, Esq. :—As you are fond of giving good information to your horticultural readers, and extend to us a great deal that is excellent, perhaps you would be willing to take a little in return, especially when it comes from an old friend. I always read your visits to country places with interest. I like to know what is going on around our larger cities, and to hear of the circulation of the wealth amassed by commerce into the rural districts. The embellishment of our noble country, by the hand of taste, has been too long delayed, and now that it has been commenced with such encouraging prospects, I feel grateful to those who, like Downing and yourself, have zealously urged on and directed the spirit of improvement.

We are doing something here, around Cincinnati in the way of rural embellishment, and the suggestion I sat down to make is, that you make a visit to the Queen City of the West. We have some reputation abroad of the rapid growth of our population, and as a mart for some of the great staples of agriculture. The flavor of our hams and the fame of our Sparkling and Dry Catawba are understood abroad, but it is not so well known that our neighborhood abounds in the most attractive and romantic rural scenery. We have a delightful country about us—a region of hill and dale, of amazing fertility ; and, now that the great forests have been opened, and the lovely valleys exposed to the eye, with their broad fields of wheat, and corn, and grass, the tasteful visitor will find landscapes here of unsurpassed beauty.

Within a few years past, the desire for country residences has become quite prevalent among our citizens, and many a delightful villa has grown up in consequence. Some occupy them during the whole year, riding in and out to their business, morning and evening, and finding both health and

domestic comfort from the arrangement; while others go to the country only in the summer, and return in the winter to the enjoyment of coal-dust and evening parties. The country has thus become highly improved for several miles in every direction, and there can now scarcely be found a city in our land so surrounded by beautiful rides and embellished rural scenery.

We owe much of this taste to our Horticultural Society, which has been conducted with great zeal, and embraces among its members a great deal of practical knowledge, and no small amount of science and taste; and quite as much do we owe to the example, writings and liberal expenditures of our venerable and excellent citizen, Nicholas Longworth.

If you will ride with me to Walnut Hills, I will show you some places worth looking at, and from the river hills some noble views; and here are some of the nurseries from which our suburban cottages are becoming embowered with shrubs and flowers. Then I would take you to Clifton, which we think quite equal to anything of the kind anywhere. This is a suburban district, commencing just beyond the streets after you rise the hills out of the city, and embraces a most beautiful drive of several miles, over a charming country, ornamented by noble country-seats. Here is your correspondent, Robert Buchanan, on a splendid hill, with a fine prospect and a successful vineyard, of which you have heard, and from which we have all tasted such choice Dry Catawba wine. He would like to take by the hand such a man as yourself.

The residence of R. B. Bowler is a magnificent affair. Were the hill overlooks a broad valley, studded with cultivated fields, villas and various beauty-spots. The house is on a grand scale, furnished and surrounded with a lavish expenditure, and the whole establishment is princely. Not less beautiful as to locality, but of far less pretension, is the more humble residence of Bishop M'Irvine, combining good taste and comfort. The fine mansion of Griffin Taylor, Esq., is beautifully surrounded, and commands a noble prospect; and the excellent man and eminent jurist, Mr. Justice M'Lean, of the Supreme Court of the United States, with his admirable lady, has a fine spacious house here, on a commanding eminence.

You will find me in a different locality, not less attractive by nature, but, as yet, wholly unembellished by the hand of wealth—perched on the brow of a hill, overlooking the picturesque valley of the Little Miami. Nature has here spread, with a lavish hand, her most bounteous gifts, and you might travel far without finding a valley so richly adorned, through its whole length, with romantic scenery, rich verdure and gigantic natural productions. It is traversed by a railroad, whose directors are so squeamish as not to authorize the slaughter or maiming of human beings, and whose trains enjoy the distinction of being, so far, guiltless of the blood of mankind. I have a snug cottage here, to which no one would be more cordially welcome than the editor of the *Horticulturist*. We are half a mile from Loveland, where the Little Miami Railroad has a station, and where the Marietta and Cincinnati Railroad connects with the former road. You can get to us over the Pennsylvania Central, or over the Baltimore and Ohio Railroad, and will be sure of safe and agreeable traveling either way.

J. H.

STRAWBERRIES.*

THE increasing popularity of the strawberry warrants the employment of every means to disseminate a knowledge of the best kinds. The cultivation is well understood ; what we want is to know the best. At some expense, we present the frontispiece of the present number, with a view of posting our readers as to some new kinds.

Trollope's Victoria, Fig. No. 1.—This is an English variety, not prolific, but the few berries it produces are remarkable for size, beauty and delicacy of flavor. It is very distinct in foliage and fruit, seems perfectly hardy and is considered by some an acquisition. Fruit of largest size, nearly globular ; light scarlet or crimson color. Our specimen is from Mr. W. Camack's market garden, Washington, D.C. Staminate.

Vicomtesse Hericart de Thury, Fig. No. 2.—The portrait of this fine fruit is from a berry of medium size, taken from the garden of Mr. John Saul, of Washington, D.C., when the season was nearly over. It attains a greater size frequently, and is there called the best early variety. Medium size, high flavor, bright color, firm flesh, and very productive. The foliage not inclined to burn, and very hardy. A French variety. The objection to trying foreign sorts is disappearing. The engraver calls this berry *Vicomte*, instead of the correct name, which is *Vicomtesse*. Staminate.

Princess Royal, Fig. No. 3.—This fruit we have not tested. The specimen was grown the past season on runners by Mr. Buist. He says of it : "Ingram's Princess Royal Strawberry is pistillate, and the *only* pistillate variety that has come under my notice of European origin. It is a great bearer ; berries of uniform size, highly perfumed and richly flavored. It is also an early variety, of firm flesh, and will bear carriage well. The vines or runners withstand the effects of sun or cold with impunity. It forms a very valuable addition to the strawberry grower, and if we were put down to two sorts, they would be Albany Seedling (Wilson's), and Ingram's Princess Royal. Yours truly, ROBERT BUIST."

Wilson's Albany Seedling, Fig. No. 4.—This is one of the greatest favorites, and is considered the most productive. It continues in bearing a long time, and being dwarf and compact in its habit of growth, a large crop can be picked from a small plantation. It should hang on the vines until the fruit assumes a dark color, being deficient in flavor when merely red. Pistillate. "Felten's Improved Albany Seedling," is of doubtful superiority, but, it must be added, that we have not seen it, nor has it, that we can learn, been exhibited.

Fillmore, Fig. No. 5.—This fine berry originated in Baltimore, and will be for sale by S. Feast & Son. We have seen only the specimen sent us for the purpose of engraving, but we have reason to believe that it will take rank with the best, when known.

Jenny's Seedling, Fig. No. 6.—A very hardy and strong grower ; good bearer, later than most varieties, and therefore valuable as prolonging the strawberry season. Jenny Lind is an early eastern variety which promises well, but must not be confounded with the "Seedling." Pistillate.

McAvoy's Seedling, Fig. No. 7.—This variety has a great reputation at Cincinnati, and in some situations is an excellent berry. Pistillate.

Longworth's Prolific, Fig. No. 8.—Opinions differ regarding this much-vaunted fruit. We have found it excellent near Philadelphia, but not equal

* See lithographed Frontispiece.

to Wilson's Albany in productiveness. Hermaphrodite. Being of a very luxuriant habit of growth, with large foliage, it must be cultivated in hills; when crowded in beds the crop is always deficient. It is too acid for some tastes.

Burr's New Pine, Flg. No. 9.—This fine berry is the acknowledged superior among strawberries as the Seckel is among pears. It thrives well on good strong soils, and for amateurs may be classed among the very best. The berry is not large, nor have we found it a great bearer. The birds are pretty good judges, and have been observed to give it a preference over all others. Pistillate.

Other favorites are *Hooker*, much esteemed; *Marylandica*, according to its admirers, without any rival, and we must say a very superior sort; *Peabody's Seedling*, not equal to expectations, but cultivated as single plants, in hills, rather promising; *Triomphe de Gand*, a showy fruit of good flavor, bright color, firm flesh, good bearer and very hardy; *Kitley's Goliath*, one of the best for the south; *Alice Maud*, good flavor, but excelled by *Vicomtesse*; *Compte de Flandre*, large, early—but *Victoria*, a seedling from it, is hardier, stronger and stands the roasting suns of the south better, though with less flavor.

In our August number we gave the vote on the five best kinds for amateurs and the five best for market, taken at the last meeting of the Fruitgrowers' Society of Western New York. Our selection of half a dozen, taking all things into consideration, at present would be as follows: *Hooker*, *Burr's New Pine*, *Vicomtesse Hericart de Thury*, *Wilson's Albany Seedling*, *Jenny Lind*, *Hovey's Seedling*. There are two other strawberries of great promise which we wish to chronicle, *Jessie Reed*, raised by William Reed, of Port Dalhousie, C.W., and from the same grower, *Reed's Grand Hermaphrodite*, both of which promise well and are of the largest size. Efforts, not without promises of success, are in progress to bring out "perpetual" bearers, which we shall have something to say about hereafter.

THE AMERICAN POMOLOGICAL SOCIETY.

Held its Seventh Session in New York, commencing on the 14th ult., and continuing three days. The discussions, as usual, were of great interest, and will be published in the usual form; the only official portion we have received is the opening address of the able President, Col. Wilder, who was re-elected. The address is a forcible appeal in favor of the Pear, and will stimulate the friends of that fruit to renewed cultivation. No one will rejoice more than ourselves to see our markets fully supplied with this fine fruit. Our position, that the dwarf pear is for the garden and not for the orchard, is, we think, sustained by facts. Mr. Hovey, an able advocate for pear culture, agrees in this; in his last magazine he closes an article on the subject thus: "For the orchard, the quince stock is unsuitable, and impatient of the careless culture they now receive."

This is what we have contended for in this journal. Perseverance, after the warm eulogiums passed upon the pear, may be expected. But as far as our knowledge extends, and we have seen many attempts at cultivating on the quince, the general opinion regarding that stock agrees with our own and with Mr. Hovey's. On its own stock, perhaps time sufficient has not elapsed to test the question; but it is in a fair way of being decided ere long—many orchards having been planted out with a view to profit.

Our able reporter furnishes the following account of the proceedings in New York.

(Reported for the Horticulturist.)

AMERICAN POMOLOGICAL SOCIETY.—Seventh Session, held at Mozart Hall, New York City, September 14, 15 and 16, 1858.

The fruit which had arrived was arranged in a hall devoted to the purpose, where it was found impossible to exhibit more than half the quantity already received. A larger hall was immediately engaged, and rapidly filled with splendid specimens of fruit, notwithstanding the extremely poor season.

Delegates were present from all States, and fruit from fifteen.

The Convention was called to order by Mr. President Wilder, at 11 A. M., there being a large number of the most intelligent fruit culturists present, Louis E. Berckmans of New Jersey, Dr. Brincklé of Philadelphia, Barry of Rochester, and others.

Delegates handed in their credentials.

Biennial members renewed membership by paying fee of \$2, life members \$20.

Transactions of 1854-'56 distributed.

Hon. M. P. Wilder then delivered the Annual Address, with his accustomed clearness.

At the close of Mr. Wilder's address, Mr. T. W. Field of Brooklyn, presented the following resolutions:

Resolved, That the thanks of the American Pomological Society be tendered to the Hon. M. P. Wilder for his long and valuable services as President of the Association, and for the uniform courtesy and impartiality with which he has discharged the duties of his office.

Resolved, That in view of his distinguished ability as a presiding officer, and his extensive knowledge as a Pomologist, his services are especially desirable in the chair of the Society, and that his acceptance of the same will be the surest guarantee of its progress and prosperity.

Carried by acclamation. Mr. Wilder very patiently bore the additional burden imposed on him so unanimously, and thanked the Convention for this renewed honor.

Committee on Nominations retired.

Convention adjourned to meet in half an hour.

2 P. M.—Society convened. The Committee on Nominations handed in the names of officers, which were accepted. Mr. Barry positively declining to serve longer, Mr. T. W. Field was appointed instead, and unanimously elected to fill the office.

OFFICERS OF THE AMERICAN POMOLOGICAL SOCIETY, 1858.—*President*: Hon. Marshall P. Wilder, of Massachusetts. *Vice Presidents*: S. L. Goodale, Maine; H. J. French, New Hampshire; Samuel Walker, Massachusetts; Frederick Holbrook, Vermont; Stephen H. Smith, Rhode Island; A. S. Monson, Connecticut; Benj. Hodge, New York; Thomas Hancock, New Jersey; Caleb Cope, Pennsylvania; E. Tatnal, Jr., Delaware; Ch. B. Calvert, Maryland; Yardley Taylor, Virginia; Walter F. Steele, North Carolina; Robert Chisholm, South Carolina; Richard Peters, Georgia; Jos. S. Moultrie, Alabama; Dr. M. W. Phillips, Mississippi; Henry E. Lawrence, Louisiana; J. S. Downer, Tennessee; W. Davenport, Oregon; C. B. Lines, Kansas; J. W. Felt, Bayou Sara, La.; Thomas Affleck, Texas; Lawrence Young, Kentucky; A. H. Ernst, Ohio; J. G. D. Nelson, Indiana; W. D. Haylay, Illinois; N. J. Coleman, Missouri; Geo. Worthin, Arkansas; B. F. Nourse, Florida; Robert Avery, Iowa; J. C. Brayton, Wisconsin; Simpson Thompson, California; Joshua Peirce, District of Columbia; Edward Hunter, Utah; Hugh Allen, Canada East; James Dougal, Canada West; Amasa Stewart, Minnesota. *Secretary*: Thos. W. Field, Brooklyn, L. I. *Treasurer*: Thomas P. James, Pennsylvania.

The Convention agreed to meet for three days at 9 A. M., and disperse at 5 P. M., with recess from 1 to 2 P. M.

Report of General Fruit Committee being in order, the Chairman moved that instead, the State Committee Report be read; these being in order, he again moved that they be laid on the table, and that *New Business* be the order for the day.

An able paper, written by Louis E. Berckmans, of N. J., was then read by T. W. Field—"Fruit Culture from a general point of view." Great calamities have befallen the cultivator of fruit in the way of insect enemies, blights, &c., and much of a discouraging nature has been said, but I would suggest that the failure of our common crops is very frequent, yet they are still grown; so with tomatoes and other choice vegetables. In France, notwithstanding the severe loss from attacks of *oidium*, fruit culturists are not discouraged, and even now the vine is flourishing again. Mr. B. then refers to the necessity for close study of varieties, locations and treatment, attention to *vertical* as well as horizontal latitudes. We should be most grateful for the sunny and fine climate we have for fruit. Had seen in one exhibition in Boston finer fruit than in the best twenty in Europe, where so much more care and labor is required. In the South, land which was not worth five dollars per acre for the production of grain and other farm crops, yielding five hundred to six hundred dollars worth of grapes.

T. W. Field presented and read a paper on the adaptation of pears to soils and localities,

showing the folly of growing pears indiscriminately, and pointing out the necessity of giving special attention to those kinds peculiarly successful in a given place. He spoke of several best varieties having originated on Long Island, and presented paintings of the Bergen, Island, and other pears, executed by Mrs. A. O. Moore, of Orange, N. J.

Both papers were referred to Committee on Native Fruits.

The President read a letter from J. J. Thomas, on Fruit Culture, especially pointing to root development. Cultivators were not right in believing that the quince root did not extend far. Had examined a dwarf pear tree with head two feet in diameter, and traced the roots three and a half feet, their fibres distinctly for half a foot further, making a complete circle eight feet in diameter. New grass roots average one foot each side of the stalk, and in order to benefit trees growing in sod land, it is not only absolutely necessary to dig a circle of eight feet where the roots actually run, but two feet wider, to prevent the grass from affecting the tree. Several other interesting instances of a similar character were cited.

Samuel Walker, of Mass., read a paper recommending the society to revise the past and mark out a line for the future. Make a complete history of all fruits of whatever kind ever grew in this country, and divide the list into absolutely worthless varieties, and first, second, and third qualities. This would serve as a general catalogue. Then make a local list for each peculiar section of country. This labor should be done by a master mind under the direction of the President, supervised by a committee of the best cultivators. Mr. W. instanced the fact that there were six valuable varieties of apples known in Ohio, which had not reached the hand of Downing; how important then that this labor be well performed.

A Committee of Seven was appointed to consider the expediency of adopting Mr. Walker's suggestion.

Reports on rejected varieties called for; Committee not ready and laid over till last day.

Treasurer's report read, showing \$428.94 in hand, after an expenditure of nearly \$400. \$170 received at present session.

Adjourned to meet at 7 P. M.

September 14. Evening Session at 7, P. M.

The President called the Convention to order. Subject for discussion, "Pear culture, mulching" &c. The president called on T. W. Field. Mulching had always proved of no value, but rather injurious. I have found that the mulch dries out in summer when most needed, so as to be of little value, and the trees cast their leaves. Mulching material furnishes a good repository for insects, and in mulched grounds you are always liable to have pears stung. Moles and mice burrow under the mulch, and are protected in their ravages.

P. Barry, Rochester. Young and newly planted trees, with short branches, should be mulched. Large trees are not benefited, and the mulch is in the way of culture. *Pruning*. On this subject there is a great diversity of opinion. The pyramidal form is certainly the most beautiful. I should begin by cutting back to within six or eight inches of the bud during the first year, to procure the best form. Treat trees like hedges, making broad bases. The dwarf-pear is materially pyramidal when it commences from the first to grow with plenty of room on every side. As grown in crowded nurseries trees become spindling. In the gardens of gentlemen the pyramidal form is decidedly the best; but the dwarf or quince must not be pruned up too high, as it will topple and snap off. The objection that low pruning is bad for cultivation, has no foundation in practice. As shown by Mr. Thomas, the point to be cultivated is wider than the mere spread of branches. I cultivate to the end of the branches and prefer not to form a low pyramid, about 18 in. to 2 feet above the soil, and allow the branches to fall over and touch the soil, cut back for two or three years, then let it grow naturally, merely thinning when too thick. The culture of the pear is no mystery; it is simple enough if the culturist has a *love* for the business, coupled with industry. A really industrious man of common sense *will succeed*. You cannot sit in your library and grow fine fruit by sending an ignorant man to care for it. Do with your own hands or go and see it done, as something occurs daily which needs attention. Gentlemen, this is a great fruit country. Plums grow well if industry be exercised. No difficulty in selecting proper soils for pears or any other fruit. If you cannot do it otherwise, go and see the best localities where fruit now flourishes, and learn by that experience. *Pears* require dry soil; if not dry, *drain*. I believe the pear culture to be most profitable of all fruit. Full crops of pears are grown every year in Western N. Y. when the apple utterly fails.

C. M. Hovey, Boston. The pear on quince trained as a pyramid is prevalent in the Eastern States. The great fault is in the lack of attention to kinds for special purposes and localities. The orchards of pears are to be found in Western N. Y. In gardens we are very successful. *Pruning*. Moderately high above the soil. It has been proved in England that the temperature at the surface of soil is from 6 to 8, or 10 degrees lower than 12 feet above. Frosts often affect trees near the soil and not above. I have noticed trees in high grounds loaded with fruit, when those on low grounds were without fruit except at the top and the leaves at the bottom instead—the fruit never being so good near the ground. I now prune off the lowest

branches. The rule I adopt is, on high and dry soils low trained trees, in damp soils higher training should prevail. I agree with Field and Barry on mulching. I believe it is not good on the whole; it is best in dry soils.

Louis E. Berckmans. As to mulching, agrees with the preceding speakers. In Georgia, the only mulch he uses is to thin the weeds about the trees, merely shading the soil slightly. Has noticed that with a heavy mulch all the water from a light shower is absorbed, and on removing the mulch, finds the ground dry. *Pruning*: Pyramidal always gives strength and solidity to the base of a tree when young, and will last forever.

R. K. Scott, of Pa. In certain localities the quince stock *does not* succeed; near Philadelphia, in a strong gravelly subsoil they utterly fail, while the standards are good. Mr. Scott presented two specimens of pear wood grafted on quince, to show the strength of union.

Samuel Walker, of Mass., approves of cutting green grass in June, and throwing a good thickness of mulch about the base of the tree, which dries up by the period for cool weather—*never* grow grass or grain in an orchard.

P. Barry. Wild pears may grow in sod, but fine pears are the work of art, and deteriorate in grass lands.

Mr. Saul, of Newburgh, thinks mulching generally carried too far; the practice has been badly abused.

C. M. Hovey thought, as the pear is a native of the East, we need not fear a little sunshine. What we want is aeration of the soil *and sun*.

M. B. Bateham, Ohio. This season all kinds of fruit have failed in Ohio. On our strong, clayey soils, we can grow pears on quince with perfect success.

Mr. Bergen, of L. I., spoke of trees 30 to 200 years old, bearing best in grass land.

R. G. Pardee, N. Y., and T. S. Gold, of Ct., advocated grass sod for trees 15 to 20 years of age. Instances were stated proving the failure of fruit where grass had been plowed up under old trees; the fruit cracking and becoming cankered, and when returned to grass, fruit again becoming fine.

The President spoke of an orchard, the soil of which had been scarified annually, which bore enormous crops of fruit.

Dr. Sylvester bore evidence to the value of tillage in orchard culture.

Convention adjourned till to-morrow at 9 A. M.

The visitors to the fine show of fruit were few in number, as the public have not full knowledge of the proceedings of the Society. Scarcely any publicity has been given to the affair. The meetings are attended by intelligent men, and discussions are spirited, but it is confined to members.

Wednesday, September 15. Met at 10 o'clock, A. M.

Some typographical errors in the list of fruits in the last transactions, were corrected by Dr. Brincklé.

Mr. Walker proposed that the apple *Lady's Sweet* should be called Lady's Sweeting, as in text books. Adopted.

The President announced the order of the day; reviewing the list of pears that promised well, with the view of adding such as can be to the list for general cultivation.

Beurré Giffard. Dr. Brincklé moved it be placed on the list for general cultivation. Mr. Cabot doubts the tree a good grower. With a slender and long growth on the quince. Mr. Wilder moved it be carried forward. Carried.

Mr. Saul called attention to the *Clairgeau*—too good a pear to remain as promising well—valuable for general cultivation. Mr. Scott: Keeps but a few days when fully ripe: tree breaks readily from quince stock. Mr. Wilder: Keeps till December. Dr. Brincklé: First quality. Mr. Parsons: Grows well on quince. Mr. Walker, Mass.: Most showy on table, though not A No. 1. Will be good, though not the best; it is not calculated for the quince; would as soon think of putting the English *Buerré d'Aremberg*. R. Buist, Pa.: 'Tis not fit for the quince. Prof. Boynton, N. Y.: Double works with Glout Moreau, and succeeds admirably. Other gentlemen express the opinion that this pear must either be grown on the pear stock or double worked on the quince.

Beurré Sterckman. Mr. Cabot moved it be called *Beurré Hardy*, as it has been pretty generally known by that name, and that it be carried to the list for general cultivation. The name was adopted, and the pear left where it is. Mr. Barry: French Nurserymen say there is no such pear as *Beurré Sterckman*.

Beurré Superfin. Mr. Cabot: One of the very best pears. Prince, Townsend and Saul coincide. Mr. Barry: One of the finest—fruit of first size and quality; trees good growers and do well on both stocks. Mr. Wilder: Thinks it equal to the best Brown *Beurré*, and agrees with Mr. Barry. Mr. Walker: Good as the best—none superior. Carried to the list for general cultivation.

Brande's St. Germain. Mr. Cabot: grew it fifteen years ago; has cut it out and rejected it.

Brandywine. C. M. Hovey moved to add to list for general cultivation. Carried.

Chancellor. Dr. Brincklé: Fine on quince.

Conseiller de La Cour. Mr. Wilder: A very good pear. Mr. Cabot: deserves to be advanced. Mr. Walker: Not sufficiently known; let it be where it is for the present.

Comtesse d'Alost. Ripens by degrees on trees twenty years old. Mr. Wilder: Bad in Massachusetts.

Delices d'Hardenpont—Doyenne d'Alençon. Mr. Prince: Very thrifty and fine. Mr. L. E. Berckmans: I should like to see it advanced; it is one of the best in New Jersey, and have found it as valuable South as here. Mr. Buist: A uniform good bearer—tree good grower. Mr. Wilder: Keeps till May in Massachusetts; flavor like the Eastern Beurré. Carried to the list for general cultivation.

Doyenne Goubault. Struck off list of promising well.

Emile de Heyst. Mr. Wilder: A seedling of Mr. Berckmans'. I cannot do without the B. d'Arenberg in winter, but I cannot grow it successfully, and I am glad to find this pear takes its place in flavor and quality, and grows better with me. Mr. Cabot: In favor. Fruit of first quality. But the tree is rather thorny. Mr. Berckmans: The tree is struggling in its growth—stands the winter well on the quince. Mr. Coit, Conn.: Double worked on quince; it is very fine.

Epine Dumas. Mr. Walker: A poor grower. Mr. Hooker, Rochester: Affords good crop. Hardy. Good for general cultivation. Mr. Berckmans: Consider it second. Mr. Terry, Conn.: The difficulty with me is overbearing. It is my best pear. Keeps till mid-winter. Mr. Wilder: Hardy, full bearer in Massachusetts. Mr. Hovey: Necessary to thin the fruit, it bears so fully.

Fondante de Charneuse. Mr. Cabot: Same as Duke de Brabant; think well of it. It is fine this season, and a good grower. Ripens first October to November. Mr. Prince and Mr. Hovey: Called Excellentissima and Waterloo, and other names for fifteen years. Mr. Berckmans: It was originally named after the daughter of Van Mons. Now known in Belgium as Duke de Brabant.

Fondante de Noël. Mr. Cabot: Moves to strike it from the list. It is not melting; have cultivated it for fifteen years. Mr. Wilder: Same opinion. Mr. Saul: A very excellent pear. Mr. Berckmans: Fine on the quince in Belgium, on the pear not good.

Kingsewing. Mr. Hovey: Pass it and leave it on the list as promising well. Mr. Walker: One of the best trees in the nursery—fruit fine, no cracking. Keeps well; mellow, and does not rot for one month. Mr. Wilder: This pear is fine and does not crack. Added to list for general culture.

Kirtland. Mr. Townsend, N. Y.: Moves to advance this pear for general culture. Dr. Brincklé: Second quality in Delaware. Mr. Hooker: Beautiful, but rots at core. Messrs. Barry and Hovey agree with Mr. Hooker. Looks well, but not of large size. Mr. Walker: Is of same opinion. Dr. Brincklé: One of the best pears in New Jersey, Pennsylvania and Delaware.

Lyman. Mr. Walker: Trees are partially winter-killed in Massachusetts, and is a bad grower—fruit A No. 1 in summer. Mr. Wilder: Not good in flavor. Mr. Berckmans: Strike it out of list as promising well. Mr. Saul: Never found the objections spoken of.

Lodge. Dr. Brincklé: Good in the Middle States. Mr. Terry, Conn.: Does not crack with us; ripens well. Mr. Cabot: The Massachusetts Horticultural Society considers it equal to Brown Beurré in the east. Ripens September 15th. Mr. Prince: Objects to snarly fruit as well as snarly trees. Mr. Terry: On pear stock it is equal to Urbaniste—very productive. Mr. Walker: Flavor is fine—tree bad. Mr. Buist: Tree thirty feet high on pear stock, loaded with fruit—on quince it is indifferent. Mr. Hovey: Hope it will be recommended for general cultivation. Mr. Reid: Grows well, but rots rapidly.

N'les. Dr. Brincklé: Thinks it is imported. Mr. Hovey considers it a native. Mr. Walker: Worthless. Mr. Berckmans: Sent specimens to Belgium to the Royal Society, which decided it did not belong there. The same reply was received from Paris.

Onondaga or Swan's Orange.—Mr. Walker: Not an A No. 1; holds leaf well, tree a good grower, good bearer; should like to see it advanced. Mr. Field: I like it; it has disappointed many. Often quite astringent and sour; very fruitful. Dr. Ward: Luxuriant growth; fine size. C. M. Hovey: One of the most valuable in the U. S., beats all other trees in vigor and hardiness, almost as large as the Duchesse. October 1st, to November; is in November what the Bartlett is in September; As good as the Urbaniste. For beauty, abundance and size, one of the best. Mr. Wilder: I was opposed to it; I now agree with Mr. Hovey. Mr. Field: In Onondaga is as large as the Duchesse. Dr. Ward: No prettier tree, none fruiting better; always decays early; brings small price; first rate cooking pear; am now using it for cooking. Mr. Prince: More hardy and thrifty than the Bartlett. Mr. Newbury, Conn.: Tart-astringent; fruit looks fine. Mr. Hovey: Better keeper than Bartlett; was kept as late as the 25th November, for the great Webster meeting at Boston, and two barrels were eaten

before other kinds were touched, being preferred over all others. Most ready market pear; better than Bartlett. Dr. Russell, Conn.: Good grower, acid and coarse with us; sometimes leathery. Mr. Clark: Ranks well. Mr. Dickerman, Conn.: One of the best. Mr. Barry: One of the first of American pears; never winter kills; sometimes not sweet, equal to *Beurré Superfin*; keeps well with me; rich, orange color; in the west very valuable. Mr. Townsend: Tree good, pear leathery, never palatable. Mr. Thompson, Ohio: Most excellent in every respect. Mr. Field: On rich, limy, soils and clay lands this pear is excellent. On light soils, very poor. Mr. Hooker: Should make it one among four in the orchard. Mr. Lyons: Good keeper, and bears well in Michigan.

Carried to list for general cultivation.

Osband's Summer. Messrs. Prince, Hooker, Barry and Wilder think it the best of summer pears; aromatic, juicy, and a remarkable acquisition. Picked early, it is a rich yellow and red. Tree upright and good grower. Carried to list for general cultivation.

Steven's Genesee Cracks, rots at core, variable, subject to blight.

St. Michael Archange. Mr. Hovey: Very excellent pear; tree one of the most thrifty and best form; leaf never drops; bears a moderate crop; when ripe, very fine; ought to be added to list for general cultivation. Mr. Field: Fine pyramid, without pruning. Mr. Wilder: Produces well; no forest tree is more hardy or holds leaves better. Mr. Buist: One of the best for foliage, hardness and keeping qualities. Mr. Frost: Very fine. Carried to list for general cultivation.

Van Assche. Mr. Berckmans saw it weighing fourteen ounces in Georgia; very fine.

Mr. Field moved that the *Hull Pear* be added to the list. Mr. Hovey: It is so fine it must be claimed as one of the very best we have; most prodigious bearer; equal to the *White Doyenné*; tree never loses its foliage; shoots long, and when in bearing is in form of an umbrella. Messrs. Wilder and Newbury corroborated Mr. Hovey. Carried to list that promises well.

The President proposed the *Cabot Pear* for general cultivation. Mr. Hovey: Equal to the *Lodge*, or even better; it brightens up of a rich, ruddy brown, sometimes a vermilion cheek; slight fault in rotting. Messrs. Barry, Field, Townsend and Walker think it equal to the *Brown Beurré*; one of the finest native pears and very productive. Mr. Hovey would like added to the list for general cultivation. Mr. Saul: Twenty years since, Mr. A. J. Downing grew it, praised it, and was censured by the Massachusetts Horticultural Society; this pear is now considered the best on Mr. Downing's place. Carried to list for general cultivation.

Mr. Hovey, of Mass., proposed the *Mariam* as promising well. Mr. Walker: Not A No. 1, but a good grower; native pear in Roxbury. Mr. French: Good market pear. Mr. Hovey: Prodigious bearing tree, breaking down if not supported; is one of the finest; much finer than the Bartlett. Mr. Wilder: Next to the Bartlett before the Mass. Hort. Society.

Mr. Hovey offered the *Cushing*, an old pear from Hingham; been neglected; as good as St. Germain; enormous bearer; fine grower; holds its leaves well. Mr. Walker: Not a good pear; coarse flesh. Mr. Terry: Rots at the core. Mr. Reid: Not as good as Onondaga.

Dr. Russell moved the *Pinneo* be added to the list of promising well; ripens in December, and is very good in Eastern Connecticut, where the accidental seedling was found one hundred years ago by Deacon Pinneo. Mr. Hovey: A very good pear: sold in Boston a long time without any name; I grew it four years, and failing to find any name, called it the Boston; it is identical with the *Pinneo*, and with that was called the *Virgalien* in Lebanon, Connecticut. Mr. Coit: A good pear; vigorous grower, and keeps well. Mr. Cabot agreed with Mr. Hovey. It was named *Pinneo*, and carried to the list that promises well.

Mr. Field offered the *Bergen* as promising well. Mr. Prince: Tree very vigorous and productive; fruit, medium size; fine flavor. Dr. Brincklé: A superior large russet pear. Mr. Bergen: A smooth pear, supposed a seedling from Bartlett or *White Doyenné*. Carried to list as promising well.

Mr. Prince offered the *Hegerman*, a seedling of the *Seckel* and double the size; it is considered so superior among those who know it, that the trees, two years old, bring eighteen dollars a dozen.

Mr. Barry offered the *Canandaigua*, as having been a good market pear for twenty years or more; upright growth, like Lombardy poplar.

The *Tea* pear was offered, and was generally considered of not much note.

Mr. Field offered the *Beurré Gris D'Hiver Nouveau*. From Oct. to Feb. Promises well.

Mr. Hooker proposed the *Church* pear. This is the same as that known as Platt's *Bergamotte* and Prince's *Virgalouae* in Western New York. Dr. Brincklé: It is known under three other names; a superior pear. Mr. Hovey: Platt's *Bergamotte* is entirely inferior to the *Church*. Mr. Lawton has trees twenty years old, that came from Connecticut, producing fruit the same as the *Church*. Mr. Bateham: Introduced about Cincinnati twenty years ago. Mr. Walker moved it be laid on the table for want of exact information.

Mr. Hovey offered *Gansell's Bergamot*. Objected to; shy bearer; killed in the north;

comes in October, when there are plenty of other good ones. Mr. Barry said it was the worst of all trees.

Henkel Pear. Mr. Reid: Good. Mr. Hovey: First-rate. Mr. Field: First-rate. Mr. Carpenter: Good. Mr. Walker: Fair in fruit; upright grower; can't say a word in its favor; have cut off mine. Carried to list as promising well.

PEAR ON QUINCE taken up—

Long Green of Cox stricken off. Mr. Barry said it was put on by mistake. The following were added to list of pears on quince: *Beurré Superfin*, *Beurré Hardy*, *Doyenné d'Alençon*, *Buffum*, *Belle Epine Dumas*.

Mr. Wilder said that a cultivator in Massachusetts had procured 800 good trees on the quince from Rochester, of the *Buffum*, to form an orchard, so well do they do in Massachusetts. Some objection was made to its overbearing.

Belle Epine Dumas on quince. Mr. Field said they would break off. Mr. Barry had them ten years old, great bearers; sometimes bent to the ground, but never broke. Messrs. Wilder and Hovey agreed with Mr. Barry.

The *Sieuille* was offered as a fine-grained, buttery pear; very large.

ON PEAR STOCKS.—Mr. Field moved to strike out *Beurré d'Arenberg*—strongly objected to—notwithstanding it occasionally cankers. Generally very fine.

Mr. Wilder moved, that the *Stirling* be added to the list for general cultivation, a seedling of Northern New York; has a beautiful yellow and red cheek. Mr. Lyons: A good pear in Michigan, for the last 35 years.

The Pears added to list, that promise well, are: The *Hull*, *Meriam*, *Pinneo*, *Bergen*, *Beurré Gris d'Hiver Nouveau*, *Henkel*, *Sterling*.

Added to list for general cultivation: *Beurré Giffard*, *Beurré Superfin*, *Brandywine*, *Doyenné d'Alençon*, *Kingsessing*, *Onondaga*, *Osband's Summer*, *St. Michael Archange*, *Cabot*.

Grapes, for general cultivation add: *Delaware*, *Concord*.

List that promise well: *Union Village*, *Logan*, *Hartford Prolific*.

At the evening session, Sept. 15, the "Grape" was taken up.

President: *Catawba*, *Isabella* and *Diana*, now stand on our list for general cultivation.

Mr. Prince: moved that the *Delaware* be placed on the list. *Bateham*, of Ohio: This grape has been named from the town of Delaware, Ohio, in which it was grown. It seems to have come from New Jersey. It is a very desirable fruit, perfectly hardy in Ohio, and a first producer in good clayey soils. Mr. Thompson, Ohio: Considers the *Delaware* one of the best grapes grown—hardy, exempt from mildew; not as rampant as some others. It is growing near Trenton, N. J. Came originally from Hunterdon, N. J., from a garden filled with foreign grapes. Mr. Reid: knows of some old vines in N. J. bearing fine fruit. Mr. Downing: has grown it 4 years; considers it one of the best, if not the very best.

Mr. Wilder: Proposed the *Concord*, which he formerly disapproved; but it now looks finely in his own grounds—does not find it very early at Dorchester. Mr. Prince: It succeeds in Lower Canada, and should like to see it added to list for general cultivation. Mr. Clarke, Ct.: It is now about ripe with us—hardy, prolific, and well worthy general attention. Reid: Probably the best grape in New Jersey of that class, better as a whole, than the *Isabella*. Newbury, Ct.: Hardier than the *Isabella*; better, earlier; very valuable indeed. Mr. James, Pa.: Does very well in Pa. It is better with Mr. Cornelius, than in Boston, as it is not so astringent. Carried to list for general cultivation.

Rebecca. Mr. Hovey, of Mass.: Moved it be carried to list for general cultivation. Mr. Prince: Is opposed; 'tis a weak and tender grape of the character of the *Chasselas*; evidently a seedling of the *White Chasselas*, and like that, very puny in out-door culture. Mr. Hovey: Had failed to discover the *Chasselas* character; thought the *Rebecca* as hardy as the *Delaware*; no more subject to mildew. I believe to be as fine as any out-door grape; had received premiums of many societies, and when *Isabellas* of 1½ inches in diameter, had been winter killed, the *Rebecca* was hardy enough to withstand the severe cold. Hoag of N. Y.: Had seen no mildew except on the Hudson River: Mr. Strong, Mass.; Mildews the same as *Diana*; suffers more than the *Concord* or *Hartford Prolific*; believe it will prove hardy. Mr. Hooker: It is not a strong grower; is hardy in severe winters; foliage somewhat sunburnt, and subject to mildew. Mr. Field: It is not hardy on L. I. Mr. Thomson: Mildews in Central Ohio. Mr. Freeman, Ravenwood, L. I.: Has found it hardy; has grown from 15 to 18 feet in length, this year; mildews some this year. Mr. Frost, N. Y.: I consider it as hardy as *Isabella* and *Catawba*; has slender growth, but very healthy. Mr. Barry: Should like further trial of this grape as promising well. Mr. Saunders: I think it has the character of a native grape, as it mildews like the native grapes on the under side of the leaf. The holes in the leaves are not caused by the sun, as some have supposed, but by the mildew eating through the thin leaf. It is a weak grower, the same as the *Delaware*; Left as promising well.

Mr. Prince: Proposed Norton's *Virginia Seedling* as a fine wine grape, being early, and must

form the basis for great vineyards in this country. The vineyards of Indiana only succeeded where this variety was grown. Geo. Hussman, of Herrman, Missouri, has a vineyard of this grape. Dr. Warder : Said it was known in Cincinnati as a wine grape and highly valued. Not sufficiently tested, and allowed to remain as promising well.

Dr. Warder proposed, Union Village, Herbemont and Logan.

Union Village. Where Isabella fails this will succeed ; does well south of the north line of Pa. ; Mr. Cabot has grown it in Salem, Mass., unprotected : hardy as Isabella, and ripens as well ; wood is strong ; grows best on moderately rich soils. Mr. Walker : Strong vine ; fruit fine ; a tender grape on the Hudson ; I cut down wood to 4 or 6 eyes and bury the vine in winter. Fruit superior ; many are here out of doors ; like Black Hamburg, and was taken for it in Boston. List of promises well.

Herbemont. Dr. Warder : Thin skin, fine for wine and table ; not hardy ; compact shouldered ; does well in Southern Indiana, Ill., and Mo. Steele, N. C. ; With us regarded as superior to the Catawba for wine. Added to list as promising well.

Logan. Mr. Thompson : Very early, fully equal to the Isabella ; Black Marion is not the same as the Logan or anything like it.

Mr. Terry, of Hartford, Ct., proposed that the *Hartford Prolific* be added to list for general cultivation where Isabella does not ripen well. It was discovered as an accidental seedling near Hartford, Ct. ten years since. Mr. Goodall, of Maine, says it ripens perfectly. Mr. Prince : A valuable grape, early and very productive. Mr. Saul : Drops half its berries before all are ripe. Hovey : It was condemned at Rochester in toto. I move it be added to list promising well. Mr. Terry : Berries do not drop off with us. Mr. Barry : I regard it as a prolific hardy grape in certain localities ; they are not of the first quality. Mr. Todd : Makes the best growth of any of the new vines I put out at the same time ; is hardy, very prolific, and early. Mr. Austin, of Ct. : With good culture the fruit hangs on. I sell more Hartford Prolific vines, than of any other sort. Mr. Hoag : Ripens 1st September ; unless dead ripe the berries hang well with me. Mr. Walker : For four years I was opposed to this fruit ; now think it No. 1 in New England. Mr. Wilder : We seem to be making a clean breast of the matter. I agree with Mr. Walker : I was formerly opposed to it, now I think it a good fruit ; I have not ripened an Isabella in 30 years ; Concord and Hartford Prolific, both ripen well ; not liable to mildew ; though not first rate it is very desirable. Added to the list that promises well.

Mr. James proposed the *Clara*, *Brincklé*, and *Raabe*.

Mr. Prince proposed *Amber Catawba*, the seedling of the Catawba ; delicate pale pink of the same size ; sweet, with a slightly musky aroma, but mild ; I have grown it for twelve years.

Mr. Prince proposed the *August Coral* of N. C. ; hardy, sweet and pleasant, reddish, medium thick skin ; succeeds in Maine ; equal to the early Isabella and Hyde's Eliza.

Mr. Hogg proposed the *Manhattan Grape* : bunches not large ; amber colored like the Rebecca. A seedling of Mr. Buchanan's.

Inquiries were made about the *Canadian Chief*. Mr. Prince : A foreigner ; white and shouldered ; a seedling of the Chasselas. Mr. Hovey : Pass it to the Committee on Synonyms ; grows well in a green-house ; tender outside as Chasselas de Fontainebleu. Mr. Barry : Received it from Canada ; said it was a hot-house grape, and was greatly censured for it ; it is as tender and worthless out-doors as the Sweet Water.

Inquiries about the Mass. *White Grape*. Mr. Hovey : All I can say is that I paid 5 dollars for a vine and now have it. Mr. Hoag : The vine is hardy and makes a fine growth. Mr. Barry's experience is the same as Mr. Hovey's.

Mr. Strong inquired about the *Carter Grape* exhibited in Mass. and well spoken of ; fruit and foliage like the To Kalon. Mr. Hovey and Mr. Prince called the To Kalon a seedling of the Catawba. Mr. Hoag : The *Carter* is perfectly hardy with me.

Mr. Bateham : The *Idem* is the poorest grape cultivated.

Child's Superb. Mr. Prince thinks this similar to Dayton's Superb, a white grape. Mr. Wilder : Mine lived the first winter, died the second.

Grapes added for cultivation under glass : Cannon Ball, Red Chasselas, Zinfandel, Black Damascus, Bowood Muscat, West's St. Peters, White Nice.

Sept. 16.

Committee on Synonyms and rejected fruits reported.

An intermediate report had been handed the President as usual. Mr. Field's paper, "On the Adaptation of Pears to Different Localities," which had been referred to this Committee, was examined by them and passed to the Committee on Publication. Mr. Hovey's report on foreign fruits was accepted and placed on file.

D. Redmond, Esq., of Ga., was invited to read a paper entitled "The Pomological Resources of the South." He said : The south is the home of the peach and fig ; both of these fruits being produced in abundance and great excellence. The jujube and the olive are also grown. It was formerly believed impossible to grow winter apples in the south. We now have native

southern varieties of winter apples equal, if not superior to any produced in the north, both in flavor and keeping qualities. All the early northern apples do well in the south. The winter and fall apples are worthless.

The Committee of Seven, appointed to report the expediency of making a list, general and special, of all fruits, as suggested at the beginning of this Session, by Mr. Walker, of Mass., reported: that they did not think it proper to enter into this at present, but recommended it be done some future day. Accepted.

Mr. Judd moved the subject of small fruits be taken up; no person to speak but once, except for explanation, and to occupy but three minutes. Adopted.

STRAWBERRIES. Mr. Prince moved to strike *Early Scarlet* from list for general cultivation. Mr. Lyons: Best in Michigan. Mr. Hooker: About the best in Western New York. Mr. Bateham: One of the best in Ohio.

Hooker's Seedling. Mr. Prince: Is not productive, except it be fertilized; it is hermaphrodite. Mr. Hoag: Very productive. In Pa. and Central Ohio one of the best. Mr. Barry: One of the very best. Mr. Field: Largest, fairest, and finest fruit. Added for general cultivation.

Wilson's Albany. Mr. Field: First rank in size and quality. Mr. Prince: Blooms in great profusion; one half flowers; never mature fruit; is hermaphrodite. Dr. Brinckle: Have counted 190 berries on one root. J. R. Shotwell, N. J.: 150 plants gave over 100 quarts of berries; one plant gave two quarts. Mr. Mannice: 100 plants put out last spring produced more than any other variety. Mr. Cliff: Two bushels from one quarter of a rod; very good. Mr. Pardee: Saw plenty in Yonkers measuring 4 to 4½ inches in circumference, and none hollow; fine flavor; beautiful mahogany color. D. Redmond, Ga.: Grown for two years; one of the very best. Added for general cultivation.

Walker's Seedling, Burr's New Pine, and Triomphe de Gand, were spoken of.

Mr. Patrick T. Quinn, of N.J., proposed *Boyd's Late Mammoth* for general cultivation, as it was very fine, large, solid and late.

The *Boston Pine* was sustained in its position.

Peabody's Hautbois. Mr. Field: Ought to be kicked out. Mr. Judd: Set out 10 plants, increased to 600 first year and yielded 8 or 9 qts. of very fine berries. Flavor excellent. I shall plant it extensively. Mr. Lawton: Shall set out one or two acres, I am so well satisfied with it; grows finely on ground without manure. Cut off the runners. Failed in Philadelphia. Mr. Mannice: On ten feet by three, plenty of wood, not half a pint of berries; only two or three fine ones. Mr. Steele, N.C. Flavor fine as I had ever tasted; withstands drouth well. Mr. Cabot: Quality poor. Looks large and handsome. Mr. Pardee: No instances of a good crop north; flavor very poor. Mr. Frost: Only merit is its size. Dr. Ward: Does well in N.J. Have an exalted opinion of it; fruit more attractive than Longworth's Prolific and other fine varieties. Dr. Sylvester: Rampant grower, fair quality. Becomes mealy when the runners are allowed to grow.

Longworth's Prolific. Sustains its former high reputation. Highly recommended by southern culturists.

Trollope's Victoria. Was struck off the list for general cultivation.

McAvoy's Extra Red. Mr. Field: Vinegar. Dr. Warder: Pick when ripe; it is fine and we prize it for its acid flavor.

Le Baron. Mr. Walker: First rate here and in England; large size; good flavor, prolific. Mr. Prince: Highest flavored large strawberry in existence.

Scott's Seedling. Great diversity of opinion in regard to this fruit.

McAvoy's Superior. Does well near Pittsburg and in several localities. Afternoon.

RASPBERRIES.—Allen's. Mr. Prince: Is productive, and is like the English Red Cane of the London Horticultural Society. Mr. Barry: Old; long ago cultivated and lost, now renewed. Best not to name it at present. Mr. Judd: Hardy fruit fine. Mr. Vail, N. Y.: In Westchester County has proved hardy, and fruit very fine. Also so with Mr. Seymour of Connecticut.

American Red. Mr. Saul proposed to strike it out. Mr. Prince: The name is indefinite; has a red bark and is very productive. Mr. Parsons: Very fine for preserving. Seed vessels of all other varieties too large.

Catawissa. Dr. Warder: Strike from list. Carried.

Thunderer. Dr. Grant: None superior; large, productive, and high flavor.

Ohio Everbearing. *Bagley's Everbearing.* Were passed over. Several persons condemned all everbearing raspberries. Mr. Barry said he had proved two good French kinds: Belle de Fontaine and Merveille (du Quatre Saisons) of four Seasons. Hopes to see everbearing raspberries as plenty as perpetual roses.

Doolittle's Black Cap. Some think it the same as common B. C., others an improvement. Mr. Mannice: Fruit twice as large as the Black Cap, and very fine.

CURRENTS.—Cherry. Mr. Cabot: Add to the list the Versailles, as large as the Cherry;

two and a-half inches in circumference. Very sweet; strong grower. Mr. Field: The Cherry a little acid, but a great market currant. Dr. Sylvester: Good grower, large, acid, good eating. Mr. Judd: Wells & Provost planted thirty acres for preserving. Mr. Cabot: Rampant; good for wine. Mr. Lyons: No better than Large Red Dutch; a little larger and more acid. Mr. Hovey: Acid, vigorous, productive; not good for table; good for preserves and jelly. Mr. Saul: Preferred the Versailles and the Large Red Dutch. Added to list as promising well.

Transparent White. (Blanche.) Large sweet, superior to White Dutch; transparent and very mild. Messrs. Barry, Saul, and Berckmans: Identical with White Grape.

Red Grape. Mr. Prince: The London Horticultural Society say it is the Large Red Dutch.

Fertile Palluan. Mr. Berckmans: One of the sweetest. Promises well.

La Caucasse. Mr. Walker: Bunches seven inches in length; berry over two inches in circumference; sweeter than the Versailles.

Mr. Saunders inquired if any one knew the *Red Antwerp Currant*?

Mr. Steele of North Carolina moved that apples be taken up.

Added to the list for general cultivation: Autumn Bough, Broadwell, Cogeswell, Jonathan, Monmouth Pippin, Smith's Cider, Wagner, Willis Sweeting, Buckingham, White Winter Pearmain (not the Michael Henry Pippin).

Mr. Bateham of Ohio, and Westbrook of North Carolina, and others, asserted that the west, south-west, and south, at least one-half of the Union was sadly injured by the lists of apples and other fruits put forth by this Society. Many of the best fruits for those regions were discarded, and others adopted, that would not flourish at all. It was conceded by leading members, that there was some difficulty on this score. But the Society had done the best it could with ten years' labor devoted to the preparation of these lists. Gentlemen from these regions must assist in perfecting our labors.

The President proposed the place of next meeting should be fixed. Mr. Steele moved it be in Philadelphia. A permanent location was spoken of. Dr. Warder proposed Cincinnati. The President asked our Philadelphia friends if it would be agreeable to have the meeting held there. Mr. James—very glad to have you always. Mr. Cabot moved it be held in New-York, as the most convenient location. Mr. Saul opposed Cincinnati. It was finally agreed that the convention meet in Philadelphia in 1860 at the call of the President.

Mr. Hogg proposed that peaches be next discussed.

Carpenter's White. Mr. Hogg had seen six which weighed three pounds, very large, white stone, juicy. Last of September and to 5th October. Added as promising well. Mr. Berckman's proposed the *Chinese Cling* or *Shanghai* as a very superior peach in the south. D. Redmond: One of the best and most delicious clings—large oblong—perfectly white. The Honey peach is a free stone. Mr. Westbrook of North Carolina: The very best peach with me. Mr. Saul: The China peach was sent in pots to Mr. Downing; but we never fruited it. It went south, and I think the peach Mr. Berckmans speaks of must be the same one. Added to the list as promising well. *Columbia.* Added to list that promises well.

The hour for adjournment having arrived, Mr. Hogg of New York proposed that a vote of thanks be tendered to the President for the very able manner in which he had discharged his duties during the present Session and all former Sessions of the Society. The vote of thanks was enthusiastically awarded to Mr. Wilder. Mr. Wilder was deeply affected by this testimony of regard, and said he was willing to spend and be spent, in this beautiful field. He believed that his Creator had endowed him with a strong love for these pursuits, and he had always done all in his power to advance their interests. With a strong sense of what he owed to those who associated with him in this matter, and hoping that they might enjoy the blessing of their labor hereafter, he again thanked them for their kindly sentiments towards him.

It was also moved that Mr. Barry, the retiring Secretary, receive a vote of thanks for the manner in which he had performed his services. Unanimously accorded. Mr. Barry, in a few words, said he had done, and would do all he could for the society.

It was also moved that a vote of thanks be presented to that portion of the Agricultural and Horticultural press which had forwarded the true interests of Horticulture and Pomology. Carried.

Mr. Cabot then moved that the Society adjourn to meet in Philadelphia in 1860, at the call of the President. Carried. Adjourned.

[Our reporter has done great justice to the Pomological Convention. If any errors have occurred, they took place when three or four were speaking at once. We have devoted all the space at our command to the Convention, and when we receive the official report, shall take pleasure in completing the account as to entries, lists of apples, &c. The display of fruits, notwithstanding the season has been a comparatively poor one, was as gratifying as it was surprising.—Ed.]

EDITORS TABLE.

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the HORTICULTURIST, Germantown, (Philadelphia,) Pa. Packages by Express, &c, should be directed to the Editor, as above, by name ; they will thus reach him almost beyond a doubt.

ORCHARD HOUSES.—The reader will find, in the present issue, a valuable article on Orchard Houses, to which we desire to direct attention. Their use is very extensive abroad, and they are gradually creeping into favor among us. "Wodenethe" has fairly stated the case, and we add, from the *Gardener's Chronicle*, the following information, from the pen of a writer who has evidently correct views :

"As the opponents of these are so quiet now, I suppose that their houses are generally giving satisfaction, and that their success is too evident to be written against. Having seen Mr. Rivers' houses, and tasted of his fine crop of Peaches, &c., I determined to build one, which was finished and stocked with young trees early in the spring of 1857. Nothing of the kind ever gave me so much pleasure, and I do not wonder at the inventor being so enthusiastic about them. Mine is a good, substantial building in brick-work, the south end glass, 60 feet by 20, with brick beds—cost, £95. It is span-roofed, and supported by a row of light iron pillars. Of course, "maiden" trees could not fruit the first year; this season they are generally full of fruit, some few trees having failed, particularly Apricots, whilst from the rest I have taken hundreds of fruit in thinning. I had some fears, as I had never grown a fruit tree in a pot, nor had a man on the ground who had more experience than myself. What I have seen has fully convinced me of the advantage of pots, they are so under command, and I much question if the trees would fruit better, or could be more healthy, if planted out. Of course, I am writing of trees in pots standing on soil. It has been quite amusing to hear the remarks of both gentlemen and their gardeners on seeing some small Fig trees growing on this plan; one, a White Marseilles about three feet high, had 60 fine large fruit on it at once, the last of which I hope to eat to-morrow, having gathered them daily for some time, and it has now a larger crop of young ones. A White Ischia is equally full, and several other kinds have been and are bearing a good crop. Now, almost every one who sees them appears astonished, some saying their Fig trees grow, but do not fruit well (these are planted out); others complain of the fruit dropping off—these are generally in pots. The plan invented by Mr. Rivers appears the "happy medium." I ought to say that the Figs are in a house of the same size as the orchard-house, but heated by hot water: this cost me £125, and I would not wish for a better, though, of course, it is a plain span-roofed house. But, for enjoyment in the sunny but cold months of spring, give me an orchard-house without heat; there you may wander for hours, if you have time, neither troubled by heat, cold, or March winds, and those who saw mine one mass of bloom will say that there was enough to admire. Whatever may be written against orchard-houses by those who have not tried them, they will be built in large numbers, and many a novice like myself will prove that there is no difficulty in their management.—J. R. Pearson, Chilwell Nurseries, near Nottingham.

STRAWBERRIES IN ORCHARD HOUSES.—Though Strawberries are but rarely among our forced luxuries, they may be turned to account in the orchard-house without interfering with other crops. Another writer in the same journal says:

"I have thought that to those who, like myself, are much interested in orchard-houses, a little interchange of experience in that department might be profitable. I give them mine, for the present season, in Strawberries. The plants were potted very late, were housed all the winter without water, looked rather bad early in spring, but, upon being watered, dead leaves picked off, &c., began to grow vigorously. Drainage-water was given frequently. They blossomed, and are bearing abundantly. My first ripe Strawberry was picked June 2, eleven days before the first in the open ground, also watered with same water. A few days later I gathered a small dish. On June 9, I weighed what I gathered; the weight was seven ounces. As regards kinds, Sir Harry is unquestionably, with me, the greatest bearer and finest fruit. I have found all that I have weighed to be a full half-ounce. Kitley's Goliah and Alice Maude are also doing well. I think I counted 22 Sir Harrys in a 32 pot; the average, perhaps, is 16 in a pot, and all gave promise of coming to perfection. I have been surprised to find that, on the average, small pots have produced the most fruit. Some 4-inch pots, 48 size, have borne capitally, the roots of the plants going well through into the border. My experience would say, 32 size is the best. I find, moreover, that the pots standing on the border, amidst the Peaches, bear earlier and better than those on a raised shelf under the front plate of the house. This is the case as regards earliness, even where the front is entirely of glass, as comparison with a friend's house has proved."—*Iota*.

Mulberries have also been introduced into orchard-houses; in fact, the list of fruits is increasing rapidly.

PLOWING MACHINES.—**MRS. LOUDON.**—The Philadelphia Agricultural Society has heard favorable accounts of a Plowing Machine invented in Lancaster county, which they are anxious to have tried. At the late meeting of the Royal Agricultural Society of England, held at Chester, numerous implements for this purpose were exhibited, and the practical advantages of steam culture were tested, proving the adaptability of the power. We hope some of our agricultural papers will publish the report. No award of a premium took place, though Fowler's invention seems to stand first. It plowed five acres a day, at a cost of 9s. English per acre. Great attention is now paid in England to Pulping Machines, for reducing food for cattle to an easily digested state. It is not a little curious that Mrs Loudon should have died just as Plowing Machines are about being perfected. In her first book, the novel of "The Mummy," she attracted the attention of J. C. Loudon, by asserting that the age of Plowing Machines was at hand.

Mrs. Loudon's "Lady's Companion to the Flower Garden" has had a circulation of 20,000 copies in England. It may be added, that her tastes are inherited by Miss Agnes Loudon, her only daughter, who is the authoress of several children's books, and various tales and sketches. Mrs. Loudon was in the enjoyment of a pension of £100 per annum, granted to her in recognition of the literary services rendered by herself and husband. A hope is expressed very strongly, and properly, that it may be continued to the daughter.

CANADA.—If our readers have been good enough to accompany us on a visit to Canada, they have doubtless discovered that there are many persons deeply interested in horticultural topics. They may also be interested to learn a few more facts regarding their near neighbors, whose agricultural statistics are more remarkable than many have believed. A few of these have reached us which may interest, no less than surprise, those whose attention has not been called to them.

In 1851 the whole animal and vegetable produce of Canada was £941,597; in 1856 it reached the enormous advance of £4,3840. Her undeveloped fisheries produce already £115,000 per annum. These figures represent the surplus wealth in productive industry only; manufactories also pay tribute to the export trade of the colony—in 1856 amounting to £104,000; ship-build-

ing alone shows a money value of £303,000. Added to these the value of exportations to inland ports we find in 1856 to be £8,000.

Turning to the home records of the colony, evidence exists of its condition and progress highly curious. In 1851 the gross amount of wheat grown was 16,202,272 bushels, showing an increase of 400 per cent during the ten previous years, while the increase in the United States had only reached 48 per cent. In oats, the produce increased 70 per cent, while that of the States was only 17 per cent; increase of Indian corn in Canada 163 per cent, and in the States 56 per cent. By comparing these with a separate State of the Union, and selecting Ohio for the purpose—no mean competitor, we have the following very curious table.

The land in Ohio is valued at nearly double that of the average of the Union, and has more than three times as many inhabitants to the square mile, she having 49.55, while the average of the Union is only 15.75. Let us look at some of the principal items. (See accompanying table).

CANADA.	OHIO.
Population.....	1,942,265.....
Acres occupied, cultivated.....	1,980,427.....
“ “ uncultivated.....	9,851,439.....
Total occupied.....	8,146,000.....
Acres occupied to each inhabitant.....	17,999,493.....
Acres of wheat.....	9 3 4.....
Produce in bushels.....	1,136,311.....
Bushels per acre.....	1,221,437.....
Bushels per inhabitant.....	16,155,946.....
Assessed value of occupied lands.....	14,487,351.....
Oats, produce in bushels.....	14.2.....
Barley.....	8.9.....
Rye.....	£89,689,551.....
Peas.....	21,434,840.....
Cows.....	1,389,499.....
Horses.....	869,835.....
Sheep.....	4,223,487.....
Cattle.....	591,438.....
	385,377.....
	1,597,849.....
	741,106.....
	814,448.....

These were the statistics of 1851; since then the country has been advancing at even a more rapid rate. In 1851 the gross wheat produce amounted to 16,125,956 bushels, in 1856 to 26,255,664, showing an increase of 10,399,738 bushels, which is equal to 64.3 per cent in the five years, and raises the return from 8.9 bushels to 10.6 bushels per head of population. In barley and rye, the returns are even more satisfactory.

In 1763, the population of Canada is given at 82,000; 1814, 430,000; 1823, 575,000; 1831, 772,000; 1844, 1,199,000; 1848, 1,491,000; 1851, 1,842,265; 1856, 2,500,000. If we compare these returns with those of the States, say for the last decennial census, we can form some idea of the relative population progress of Canada. In Great Britain the increase amounted to 13.2 per cent; in the United States to 85 per cent, while the population of Canada increased 69 per cent; or if we were to take the western province alone, we should find an increase of no less than 104 per cent in the ten years. This increased population appears to be the very life-blood of the colony.

While the export trade since 1851, shows an increase of, in round numbers, 150 per cent, the imports have fully doubled themselves in the same period.

If we take the present productive returns of the cultivated lands as a basis for calculations, it would be seen that the already occupied land in the colony would support a population of about 10,000,000 inhabitants; and if the present progressive rate of increase is sustained, a writer in "Hunt's Merchants' Magazine" tells us, that at the close of the present century, we may expect to see Canada occupied by a population something like 20,000,000 in number. Whatever her numbers may be, it is quite certain for years to come, the great strength of the country will lie in the productions of her soil. With these she will pay for foreign manufactures; her surplus

will supply foreign wants, whose surplus will administer to her necessities and comforts, and thus the scales of commercial benefit be kept pretty evenly balanced.

It is quite clear that there is ample space in Canada for a largely increased population, and it is equally clear, if we may judge from the past, that every increase is followed by a generally increased prosperity. To induce this by means of immigration, the government have lately offered free grants of land along three great arterial lines of road, which have been recently opened up and laid out for settlement. The grants are not to exceed 100 acres to each.

These lands are generally of very excellent quality, and well adapted to all the purposes of husbandry.

Australia excepted, no country furnishes such singular instances of the rise in the value of surveyed lands as the last five years have witnessed in Canada. The development of the railway system throughout the Province, has been the principal agency by which this has been effected. When we recollect that 1852 saw Canada without a single railway, and that 1857 saw her with 1500 miles completed, and 500 miles more in process of construction, the rise in the value of land is readily understood. The lines of railway must be looked upon as a series of accessible markets for the country they serve. The natural consequence is, that every product of the farm has acquired a certain money value, although before this new access to market it may have been absolutely valueless. The immense remuneration thus obtained for the same outlay of labor, has greatly enhanced the value of capital. Land in old settlements, remote from lake ports, has doubled itself in value in five years; while wild lands in new settlements, near to which a railway passes, have trebled their value within a shorter period. These all-powerful means of communication have opened up the country, made available a vast amount of inert wealth, stimulated industry, and effected a complete revolution in farming economy within a range of twenty miles on either side of the course they take.

For some remarkable statistics regarding the Victoria Tubular Bridge, at Montreal, the reader may consult with pleasure the article on "Iron Bridges," in the London Quarterly Review for last July.

BAGLEY'S PERPETUAL RASPBERRY.—It will be perceived by our advertising columns, is for sale only by the agent, Andrew Bridgeman, 878 Broadway, New York.

DEAR SIR:—My poor Delaware Grape is dead! It was a nice layer, carefully separated from the parent vine, and presented to me by a friend—potted in early spring, and nursed in the green-house, but without avail.

I was also interested in some half dozen cuttings from the same vine, and a dozen or so of cuttings from the original vine in Ohio, but not one eye vegetated in the whole lot.

An amateur in a neighboring town succeeded in starting four plants from fourteen eyes; while, of four cuttings grafted in vigorous stocks, not one is now alive. Obstinate behavior!

I procured from a neighbor, this spring, some scions of the Hawley Apple. Certain facts in the history of his tree were noticeable. Some years since, his wife sowed a single seed of a choice apple in a flower-pot, with the expectation of obtaining the same kind of fruit. The seed vegetated, and was transplanted, and in due time became a tree, and bore fruit which had a resemblance to the original, but was considered to be so much inferior as to be unworthy of cultivation. The tree was then grafted—all over, as was supposed—with the Hawley, and it has since borne good crops of this fine apple. One small limb, however, of the original tree, which had escaped the notice of the grafter, came into bearing about with the Hawley, and is an apple perfectly similar to the fruit from which the seed was taken and planted, and is considered by the owner so excellent—superior even to the Hawley—that he much regrets his hasty decision in grafting the tree at all. D.

J. J. SMITH, ESQ.:—Samuel Miller and W. T. differ on the Grape question, in the June and July numbers of the *Horticulturist*. I think neither party has done the subject justice, but Mr. Miller is right concerning the pruning of grape vines; they should be properly trimmed,

and all the useless or dead branches taken off, but the severe mode of pruning often practised is hardly advisable.

Another thing is certain: W. T. will find he is not able to confine the roots of the grape to a hole or border of ordinary dimensions, unless he boxes them in.

I am not able to say for the North, but it is pretty well proved here, and southward of this, that the grape will do well without much trenching (in good soil), if supplied with fertilizing matter near the surface, and well mulched.

It is a well-established practice to cultivate a peach-orchard regularly in New York, while in North Carolina it is undoubtedly the best plan to enrich the ground on the surface. The same rule applies equally to the grape, and all other fruits.

Respectfully,

Pleasant Ridge, near Bendersville, Pa.

F. W. C.

GLASS HOUSES.—In the September number of the *Horticulturist* Mr. Eaton, in an article on grape houses, expresses himself as being strongly in favor of curvilinear roofs, and enumerates some important advantages which he considers they possess.

My object was to endeavor to show how a neat, and at the same time a cheap and efficient glass house might be built; for there are many persons who would be willing to build such, who do not feel inclined to adopt a costly ornamental style, yet would not be pleased with a roughly built house of boards, and the broken sash ventilation of Mr. Eaton.

Now I wish to state at once that I have no dislike to curved roofs. When properly constructed they answer very well as grape, or indeed any other kind of glass houses; in alluding to them in my article of March last, I had not the most distant idea of condemning them. But as they have been brought forward as models, it may be well to enquire wherein their superiority consists.

With regard to the superior beauty of curved glass roofs, I confess that in the most of them which I have seen, (not excepting the Great Palm house at Kew,) there is a want of architectural proportion which detracts much from the beauty and *grace* which a curved roof would otherwise confer. This I have thought proceeds from a deficiency of upright base, or supporting elevation. A house so constructed that the curve seems to start immediately from the ground, originates a feeling similar to that produced in my mind when looking at a vase sitting on a lawn without a pedestal.

As to the additional gain of training surface, I think there is a mistaken notion prevalent on this point. For example, take a house 10 feet wide and 12 feet high, let there be 2 feet upright wall, then curve so as to procure a rafter 14 feet in length, which will be in good proportions. A common span would, in addition to the upright wall, require 2 feet upright glass, and a rafter 12 feet long. So that the training surface is very equally balanced, and any gardener would undertake to grow just as much fruit in the one, as he could in the other.

An "important disadvantage" in all narrow high houses, is the difficulty of equalizing the temperature. This is well understood among practical gardeners.

The cost of curvilinear houses, is, I have good reason to know, over 30 per cent that of angular houses. I again repeat that the latter are "much cheaper and equally efficient."

Germantown, Pa.

WILLIAM SAUNDERS.

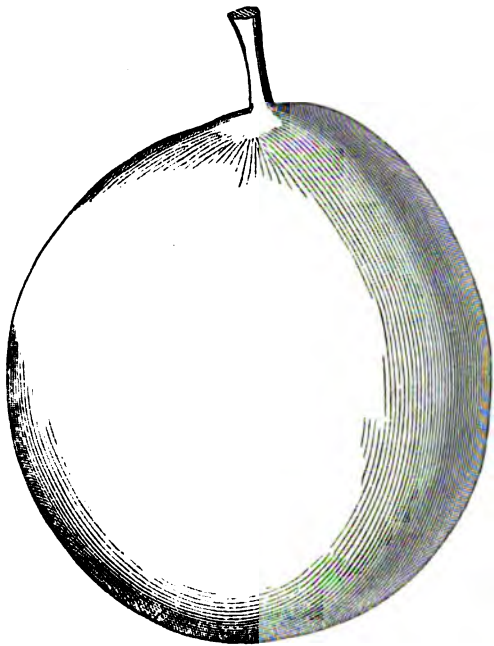
PINNEO, HEBRON, AND BOSTON PEAR.—Two of our valued Connecticut correspondents have forwarded separate parcels, without concert, of the pear which goes by this name. Dr. G. W. Russell says it has long been cultivated in the eastern part of the State, and has lately been disseminated under the name of the "Boston" by Mr. Hovey. I obtained them last week (August) in Gilead, sixteen miles from Hartford. Last year I compared the fruit and wood, and found them alike, and published an account of the pear in the *Homestead*. It was the decided opinion of a number who examined both here last year that the "Boston" was no other than the "Pinneo" long cultivated in this State. Accompanying you will also find specimens of Langdon's seedling Plum, (which came safe and are excellent.)

Colonel D. S. Dewey says: "We had an excellent show of Fruit, Flowers and Vegetables at

our Horticultural Exhibition (Aug. 12). Among the fruits was a plate of pears from the grounds of John A. Tanitor, Esq., specimens of which are herewith sent, which I obtained from him expressly for you. They are known with us as the Hebron Pear, and my opinion is that they originated in the neighborhood of Hebron, Connecticut, and not far from the original locality of the Pinneo, alias "Boston Pear." I find no mention in the books of any pear by their name, and I send them to you for examination. The tree is an upright grower, and bears abundantly every year. The fruit has been known here for some ten years or more, and is highly esteemed among our early summer pears. I have added from my own trees to fill the box, specimens of the English Jargonelle pear and Red Astrachan Apple, &c."

All which came in good order. The Pinneo, or Hebron pear is identical with the "Boston." No description, moreover, could be more perfect than O. Downing's of the Boston, if it had only been rightly named the "Pinneo" alias Hebron, as Mr. Harvey now admits.

THE COLUMBIA PLUM.—A correspondent, W. C. W. Baltimore, forwarded early in September magnificent specimens of the Columbia Plum; a drawing of the largest of which is here presented. The tree was obtained from Parsons & Co., and planted in a Baltimore town garden. This fine specimen measured fully $7\frac{1}{2}$ and $7\frac{3}{4}$ inches in circumference, and is the largest we have ever noticed. "Miller's Spanish" may exceed it. Have any of our readers kept measurements of General Hand, or Magnum Bonums, to compare with the above dimensions?



COLUMBIA PLUMS.

"THE WANDERING JEW"—A little runner with an ivy leaf and neat flower," which, in your August number you "commend to the attention of amateurs," is, indeed, a commendable plant. With us it is perfectly hardy, and is known also, by the euphonious epithet of Mountain Myrtle.

An interesting way of growing it is to plant it in a vase, or pot, or small tub, and encourage it to trail equally over the sides, and when the descending tips reach the ground, the pot is elevated on a pedestal, (another pot inverted, or a round block,) and, eventually, it becomes a circular mass of very pretty foliage, sufficiently curious and pleasing in appearance to arrest the attention of all beholders."

TREE LABELS.—Mr. B. K. Bliss, of Springfield, Mass., has laid on our table, specimens of his cheap and excellent labels for trees, especially fruit trees. They consist of a ring of metal enclosing a printed name under mica, and appear to be an admirable adaptation.

CORRESPONDENTS will see we have been obliged to omit many valued communications in the present number.

CATALOGUES, &C., RECEIVED.—Catalogue of Fruit and Ornamental Trees, and Plants, Knox Nurseries, Vincennes, Indiana. By Simpson, Ten Brook & Co. Our parish is indeed extensive when such fine catalogues of everything valuable reach us from such long distances as we chronicle this month.

Catalogue for 1858 and 1859, of Gloaming Nursery, Clarksville, Habersham County, Georgia. By Jarvis Van Buren. A great variety of valuable fruit.

Catalogue of Fruit and Ornamental Trees, &c., &c., at the Morris Nurseries. J. L. Darlington & Co., Westchester, Pa., 1858-59. This well known establishment continues to sustain its reputation. They also issue a Wholesale price list of importance.

Premium List. Three Distinct Exhibitions, Agricultural, Horticultural and Floral Departments, of the 30th Annual Fair of the American Institute at the Crystal Palace, New York, 1858.

Wileox & Felt's descriptive Catalogue of Fruit Trees, West Feliciana Nurseries, Bayou Sara, Louisiana.

Journal of the New York State Agricultural Society, August.

The Dudley Observatory and the Scientific Council Statement of the Trustees. Albany, 1858. The Astronomers have somehow or other, instead of pointing their instruments at the heavens, run the whole affair into the ground. It is not difficult to decide were the error lay. The Trustees appear, by their own statement, to have the best of the argument.

Circular of, and ticket of admission to the New Hampshire State Agricultural Society Exhibition at Dover, October 6th, 7th and 8th.

List of Fruit on Exhibition from Downing Hill Nursery, Atlanta, Georgia at the second exhibition of the Pomological Society of Georgia, Athens, August 3d, 1858. A noble list for one exhibitor.

Descriptive Catalogue of Fruit and Ornamental Trees, Evergreens, &c., cultivated and for sale by Franklin Davis, at the Staunton Nurseries, Staunton, Va., 1858. This is the Catalogue of an extensive and successful nursery, every line of which indicates that the proprietor thoroughly understands his business.

Hand-Book of Fruit Culture. By Thomas Gregg. New York, Fowler & Wells.

Books for the People, published by Miller, Orton & Co., 25 Park Row, New York.

Catalogue of Grape-Vines for sale at Vinwood Grape Nurseries, Ilion, Herkimer County, New York. J. D. Ingersoll, Proprietor, 1858-1859.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, Roses, Evergreens, Hedge Plants, &c., cultivated and for sale at the Fruitland Nursery, by P. G. Berckmans & Co., near Augusta, Georgia. A most valuable and useful Catalogue, which every cultivator may study to advantage.

Wholesale Catalogue of the Bloomington Nursery, Bloomington, Illinois, for 1858 and Spring of 1859. F. K. Phoenix, Proprietor. An extensive collection, and at reasonable prices.

Catalogue of new and standard Strawberries, for Autumn of 1858 and Spring of 1859, for sale by John Saul, Washington, D. C.

H. Collin's (Auburn, N. Y.) Descriptive Catalogue, Owasco Lake Nursery.

Levering's Experiments upon the Sorghum are for sale by H. A. Dreer, 327 Chestnut St., Philadelphia, and should be consulted by all interested.

Catalogue of Dutch Flower Roots, &c. &c. Thomas Meehan, Germantown nurseries.

Strawberry catalogue of Isaac Jackson, Jennersville, Chester county, Pa., successor to Thomas M. Harvey.

Trade list, fall of 1858, and Spring of 1859. Thomas M. Harvey, Jenner'sville, Chester Co. Pa.

Lebanon County, Pa., Agr. and Hort. Society's first annual Exhibition. List of premiums &c. for the 6th 7th and 8th of October, 1858.

Mr. S. Miller's fine collection of native grapes and other matters, sent for tasting, shall be noticed hereafter. Our space is all filled before their receipt.

Nealy Brothers & Bock's descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, Roses, Green-house Plants, &c., at Bird's Nest Farm, Burlington, Iowa. A most stately volume.

ANSWERS TO CORRESPONDENTS.

TO A SUBSCRIBER, MASSILLON, OHIO.—This a very common affection with Evergreens in midsummer, generally attacking Pines and Silver Firs, and sometimes Spruces, and turning them red.

It is probably atmospheric, and caused by the sudden action of the sun, either through or immediately after a shower or heavy mist, upon the termini of the leaves, and sometimes upon even the younger and more succulent shoots. We are not aware that it produces any injury beyond disfigurement.

L. S., GALESBURY, ILL.—*Cassia Chamaecrista*.—It does not often choose a wet soil. In a flower-garden, it would probably do well in a very poor ground. It usually grows in soil formed of rotten rocks.

P. P.—Your lawn has been well broken up, well sowed, except that you omitted a portion of white clover, "but is now filled with switch-grass," &c. You must either mow it very frequently, or pasture it with sheep, and hand-weed the worst portions. The difficulty in all new lawns, for some years, is, that the weeds being more rampant in their growth than the finer grasses, get ahead, and overpower them. By keeping the entire growth of weeds and grass constantly down, either by close mowing, or by feeding down with sheep, the fine grasses get a better chance of sun and air, and eventually they subdue their enemies. Sheep feed closer than the scythe can cut; but, in July and August, care must be taken that they do not nip too close, or the roots of the fine grasses would suffer. White clover is indispensable to a good bottom sod; grass alone for a lawn does not get thick enough unless mowed occasionally, say once a month, when it is not what is properly a lawn, but a well-kept field. P. P. should, in the spring, fresh harrow his lawn, sow six or eight pounds of Dutch clover to the acre, roll, and either mow frequently, say every ten days, or inclose with hurdles and keep sheep on it for one, two, or three years, carefully fencing them from the trees, until he is satisfied with it; then remove the hurdles, and restore it to its original object. Don't expect a lawn, any more than a hedge in one season. In England, the bottom is formed by moss; here, where it is too warm and dry for moss, we must use the next best substitute, white clover.

The weed enclosed is *Polygonum auriculare*.

S., WASHINGTON, D. C.—Your plant is a *Crinum*; the species it is impossible to designate without the whole plant.

MUSCAT CATAWBA GRAPE.—We have no information that is reliable on this subject. Anonymous correspondents will hardly succeed in palming upon us such a novelty, the existence of which may well be doubted until it has passed the examination of some society or persons known to be reliable.

S.—Your plant is *Pancreatium odoratissimum*, usually found in choice collections, but not common elsewhere.

MISCELLANEA.

THERMOMETER.—An ingenious device for recording variations of temperature at the period of their occurrence is exhibited by Mr. Gauntlett of Middlesboro'-on-Trent, England, the inventor. It consists of a long and thin zinc tube, containing a loose wooden rod—the two are fixed together at one end, and the relatively greater expansion of the zinc on increase of temperature causes the one to protrude in varying degree beyond the other, as the temperature changes. This varying motion is communicated by leverage to a pencil pressing on a revolving cylinder of paper, which is moved by clockwork, and carries off the indications of every successive minute on its surface. The invention receives a silver medal—so does another very inge-

nious contrivance for whipping cream or eggs, exhibited by Mr. Turner, of 196 Great Dover-street, Borough, London.

PRESERVING FLOWERS.—M. Lucas, an amateur, residing at No. 20, Rue basse de Rampart, Paris, has extensively circulated an address to Presidents of Horticultural Societies, offering to divulge his method of preserving flowers in all their freshness for an indefinite time, provided he receives from the Society a Medal of Honor, and is created an honorary or corresponding member. M. Lucas does not accompany his circular with any proof that his method is what he describes it to be; and we fear that, until this is done, his proposal will meet with little favor in this country.

THE VINE DISEASE.—Mr. Victor Chatel states that if the second and third sets of shoots of a Vine are cut away, the disease is much mitigated or wholly removed; but that to stop Vines, which is necessarily followed by shoots of a second or third development, is to increase the disease. This appears to arise from the softness of the leaves of the second and third class of shoots.

POT CULTURE.—The conditions of air and moisture are attained by an efficient system of drainage, on which, indeed, the success of pot cultivation mainly depends. Water must be often applied, and yet, unless it passes through freely, the soil will become stagnant and heavy, and unfit for healthy vegetable life. The subject of drainage is so well treated in Dr. Lindley's *Theory of Horticulture* (1855, p. 438), that we cannot improve upon it, and shall therefore quote a passage:

"The ordinary way of putting at the bottom of the pot a large quantity of crocks is but a clumsy proceeding, and one which, if it affords an opportunity for roots to spread themselves freely, affords also a harbor for worms, slugs, wood-lice, and other vermin. To remedy this, I put at the bottom a piece of perforated zinc, an inch and a-quarter, or more, square, according to the size of the pot, so as completely to cover the hole; this may be had, for a trifle, of any brazier or tin-plate worker, and may, by the help of a strong pair of scissors or small shears, be readily cut to the requisite size. Upon this I place a small potsherd, with its convex side upwards, taking care that, by resting partly upon the zinc, it renders it immovable. I then put in a quantity of good moss, so as to form a layer of a third of an inch or more thick, when pressed together by the mould, and then proceed to finish, as usual, the operation of potting the plant. I have found this method to succeed perfectly. Constant drainage is effected; the moss, particularly with the addition of the potsherd, prevents the earth from choking the sides of the zinc, and by partial decomposition, where it is in contact with the soil, affords an agreeable receptacle for the roots of the plants in which they appear to delight. All sorts of vermin are excluded; the operation of shifting is facilitated, as the earth comes out of the pot unbroken; and it is, moreover, a much more cleanly process than the one commonly used."

Always use moss at the top of the crocks, to prevent the light soil being carried through to the shelves of the green-house—an inconvenience much felt by the ordinary method.

A GREAT POTATO COUNTRY.—Mr. Collins, of Red River county, Texas, challenges the State to beat his Irish Potato, which measures $15\frac{1}{2}$ inches in circumference one way, and $13\frac{1}{2}$ the other.

CALIFORNIA WINE AND BRANDY.—The San Francisco *Price Current* remarks on this production; (the Brandy spoken of is quoted at \$3 per gallon):

"California Brandy, distilled from the native grape, can now be bought in the market, and of a quality equal to the average brands of Cognac, and greatly superior to the Rochelle. James T. McDougall & Co., the pioneers of California grape Brandy, have for months been making regular sales to the trade from their distillation of last season, which amounted to the very respectable quantity of 500 octaves. Some of their brandy was shipped to New York, where it met with favor, and realized, for a first consignment, a high figure. From the grape crop

this year, it is estimated 50,000 gallons will be made, or 300 to 400 per cent. more than last year. At this ratio, three years hence, fine Brandy will be one of our exportable products."

For two years past, various classes of Wine, made from the native grape of Los Angeles, have been growing upon popular notice and favor. The *Alta California* says, it is estimated that 150,000 gallons of Wine were made in the State last year; and, from the grape crop this year, it is expected 350,000 gallons will be manufactured. A great number of new vineyards have been planted in the vicinity of Los Angeles since 1853, and the annual grape crop must have increased enormously.

The *Alta* says: "The grape chiefly grown in California, for making Wine, is of Spanish stock, and was introduced by the priests, between the years 1769 and 1780. The vine is hardy and healthy, and the berry juicy and strong. An acre of vines is calculated to yield 1,000 gallons of Wine, and never less than 800, although 400 is considered an average yield in Ohio and Europe." Almost every variety of grape known is, however, being cultivated at various points throughout the State.

Notes for the Month.

VINEYARD CALENDAR FOR OCTOBER.

BY R. BUCHANAN, CINCINNATI, OHIO.

IN this latitude, October is the month of the vintage. From the first to the second week the grapes will be ripe enough to gather. All hands are now turned out to the vineyard, men and women, boys and girls, for the grape harvest is a busy and a merry time.

Each person has a knife, and two wooden buckets, the bunch of grapes is cut from the vine, and any unsound or unripe berries picked off, and thrown into one bucket, and the perfect bunch into the other. As the buckets are filled they are emptied into flour barrels, which are covered with a cloth to keep the bees and wasps out.

When a small wagon or cart load of barrels are filled, they are immediately hauled to the wine house, to keep the grapes from heating, by exposure to the sun.

In cutting the grapes, any bunch not perfectly ripe, is left on the vine to mature, and to be gathered with the last cutting, a week or ten days later. Enough grapes should be cut each day, to fill the press in the evening; which for one of ordinary size, may be 17 or 18 barrels, yielding 200 to 210 gallons of juice. This is for a moderate crop, and a vineyard of 6 or 8 acres. A large crop, and a more extensive vineyard, would of course require greater expedition in gathering, and two or more presses. The pressing is generally done in the evening. The grapes are mashed by passing the bunches through a small mill with a pair of wooden rollers, or, in a mashing tub, a vessel like an inverted churn, with a wooden beetle, breaking the skin and pulp, but *not* the seeds.

The mashed grapes are put on the press, when about one third the juice runs off without any pressure. The power is then applied, and the remainder of the juice pressed out by two or three pressings, cutting off 6 or 8 inches of the outer edge of the "pomace" and putting it on top of the mass each time. The juice from the last pressing, being dark and astringent, is put with that from the refuse grapes, to make an inferior and cheap wine.

As the juice runs from the press, it is conveyed through a gutta-percha pipe into the casks in the cellar under the wine house, and left to ferment. The casks are filled about $\frac{3}{4}$ or $\frac{5}{6}$ sixths of their capacity and the bung hole covered with a cloth, that the carbonic acid gas, in the process of fermentation, may escape.

A better plan is to fix a tin syphon in the bung hole, one end being turned down into a bucket of water, so that the gas shall escape through the water; this excludes the air from the new wine when the fermentation ceases, or is feeble.

In three or four weeks it will be safe to fill the casks up bung full, and drive the bungs in *lightly*.

The "pomace" of the grapes, and the "lees" of the wine, are given to the distillers to make brandy, they retaining half the product for making it.

Straining the grapes has been abandoned, as a useless expense, and the wine fines better by the small amount of "tannin" extracted from the stems. No work in the vineyard is required after the crop is gathered, unless it may be to repair the surface drains, and trenches, if any, to prepare for fall and winter rains.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

GRAPES AND GRAPERIES.—There is no fruit-bearing plant, adapted to temperate climates, at once so available and useful as the grape; and now that cultivators seem to be settling down to a unanimity of opinion with regard to the culture of both foreign and native varieties, it may safely be predicted that the grape is to take the first rank among American fruits.

The recent valuable additions to our list of hardy and native kinds has given an impetus to their cultivation, and awakened an interest in the production of seedlings of further excellence, leaving little room to doubt that we will at no distant day, possess varieties equal to the best of any climate, and produce abundant crops with as much success and facility as we do Indian corn.

The first requisite in grape culture is a sufficient depth of porous soil. A free percolation of water through the soil is indispensable. Mere richness of soil is only of secondary importance, no amount of surface manuring will secure profitable crops on a retentive subsoil.

A sandy loam is the most suitable, although proper draining and trenching will render even clayey loams adapted for their profitable growth. The soil should be broken up at least 18 inches in depth, so that the roots may ramify in a medium somewhat exempt from external influences, and ensure a uniform healthy growth from the opening buds to the ripening of the crop. Having thus prepared the soil we would commend the following general routine of management. Procure plants not more than one year from the cutting, and prune them down to a couple of inches when planted. The treatment during the first season will consist in simply securing them to their supporting trellis. In winter prune down according to vigor; if the canes have grown to 10 or 12 feet, prune down to about half of that length. Most of the buds will produce a fruiting shoot; allow not more than two bunches on each shoot. Tying up to the trellis is all that will be necessary until the period for winter pruning arrives. During August and September it may be necessary to dust the vines with sulphur in order to prevent or check the spread of mildew. The great secret in grape growing is to preserve the foliage healthy and unimpaired until the crop is gathered.

Let the winter pruning be directed to the securance of young growths; the renewal system of pruning best encourages the growth of young strong shoots, which invariably produce the best fruit.

There is no danger of the plants overbearing, if pruned understandingly during winter and "let alone most severely" during the period of growth. Summer pinching and pruning weakens and retards growth, and diminishes the foliage necessary to ripen the fruit.

GRAPERIES.—Glass houses for exotic grapes are now built for reasonable prices, and their culture is extending accordingly. Here again the requisites of a properly prepared soil are paramount. A free, sandy loam is the best for a basis, if manures are applied let them be well decomposed and thoroughly incorporated. Bone dust and charcoal may be freely mixed with the soil, but these latter are not indispensable. Neither is it necessary to make an extensive border at the outset. A border 6 or 8 feet wide and 2½ or 3 feet in depth will afford a sufficient nourishing medium for a number of years; and additions can be made from time to time as circumstances seem to indicate its requirement. This gradual addition to a border is preferable to making it larger at first, as in the latter many of the principal advantages of a good border are lost before it is reached by the roots.

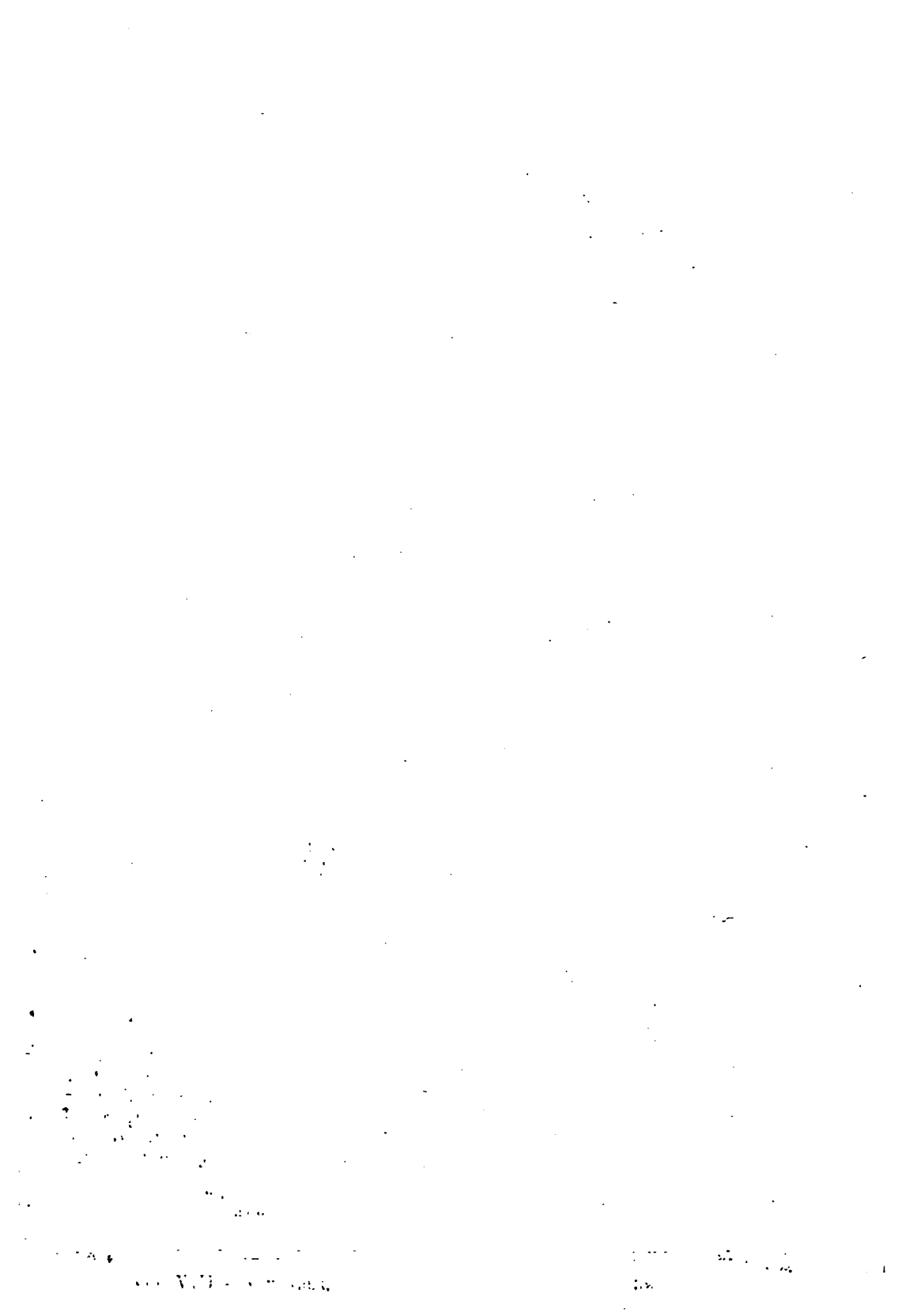
In choosing plants, select young healthy stocks—one year from the cutting is preferable to older plants; cut them down at planting to a couple of inches, and when they push into growth disbud all shoots but the strongest. Let them grow at will, do not remove a healthy leaf or twig until growth is completed for the season. If the plants have done moderately well they will have grown from 15 to 25 feet. In November prune down to 8 or 10 feet lengths. This much for the first season. The second year's growth will show a portion of fruit, leave but one bunch to a shoot. If any of the shoots indicate an exuberance of growth over the others, check it by pinching out the point, but only to equalize growth, the more foliage the better the crop. Do not be deterred from taking a slight crop the second year by any fear of destroying the future health of the plant. To form rich composts for borders, and stimulate, and pinch and prune and cut back a grape vine for 4 or 5 years before allowing it to fruit, is a waste of time and means, altogether unjustifiable, and no one having the slightest pretensions to culture would find it profitable to do so. Those who are less fortunate, or less skillful than their neighbors, sometimes find it convenient to make a virtue of a necessity, by decrying the results which they cannot attain. It is only the ordinary practice of good gardeners to fruit grapes the second year after planting, and continue fruiting each succeeding year without fear of losing a crop or weakening their plants.

The growth during the third and following years, require the same general treatment. The greater the amount of foliage, provided it is under the influence of light, the healthier the plant and the greater the crop which it will mature. Close pruning during summer is more frequently the cause of badly colored grapes, than all others combined.



FONDANTE DE MALINES PEAR.

Lith. by Geo. Hayward, New York.



THE LITERATURE OF THE GARDEN.

MEN AND WOMEN BLOSSOMING EVERY YEAR—OUR FOOD, EXERCISE, ETC.



ALL our best literature teems with allusions to gardens; most happy do we esteem those who resemble the man of whom it was said,

"The fields his study, Nature was his book."

Leigh Hunt's "Sudden Fine Weather" contains some verses that, for sprightliness and novelty of thought, will strike some of our readers. He suggests :

"Ah, friends! methinks it were a pleasant sphere
- If, like the trees, we blossomed every year;
If locks grew thick again, and rosy dyes
Returned in cheeks, and raciness in eyes,

And all around us, vital to the tips,
The human orchard laugh'd with cherry lips'

Lord! what a burst of merriment and play,
Fair dames, were that! and what a first of May!
So natural is the wish, that bards gone by
Have left it, all, in some immortal sigh!"

This is all very agreeable to think about; but see how he dashes cold water on the idea, in the succeeding lines!

"And yet the winter months were not so well;
Who would like changing, as the seasons fell?
Fade every year; and stare, midst ghastly friends,
With falling hairs, and stuck-out fingers' ends?
Besides, this tale of youth, that comes again,
Is no more true of apple-trees than men.
The Swedish sage, the Newton of the flowers,
Who first found out those worlds of paramours,
Tells us, that every blossom that we see
Boasts in its walls a separate family;
So that a tree is but a sort of stand,
That holds those filial fairies in its hand;
Just as Swift's giant might have held a bevy
Of Lilliputian ladies, or a levee.
It is not he that blooms; it is his race,
Who honour his old arms, and hide his rugged face.
Ye wits and bards then, pray discern your duty,
And learn the lastingness of human beauty.
Your finest fruit to some two months may reach:
I've known a cheek at *forty* like a peach."

It must be admitted the above is well considered, thoughtfully expressed, and attractive enough in its way; but it is right to give a little moral along with the verses; it is conveyed in lively metre, and here it is the poet, still Leigh Hunt, an especial favorite as an essayist as well as rhymers, is making an attack upon high living, and the warnings which great feeders exhibit in their eyes, noses, &c.; and this is the moral:

"This made, t'other day, a physician declare,
That disease, bona fide, was a part of our fare.

For example, he held that a plate of green fruit
 Was not only substance, but colic to boot;
 That veal, besides making an exquisite dish,
 Was a fine indigestion, and so was salt fish:
 That a tongue was most truly a thing to provoke,
 Hasty-pudding slow poison, and trifle no joke.
 Had you asked him accordingly what was the fare,
 When he dined t'other day with the vicar or mayor,
 He'd have said, "Oh, of course, everything of the best,
 Gout, headache, and fever, and pain in the chest."
 'Twas thus too at table, when helping the meat,
 He'd have you encourage the people to eat,—
 As "Pray, sir, allow me,—a slice of this gout;
 I could get no St. Anthony's fire—it's quite out.
 Mr. P. there,—more night-mare? my hand's quite at leisure?
 A glass of slow fever? I'm sure with much pleasure.
 My dear Mrs. H. why your plate's always empty!
 Now can't a small piece of this agony tempt ye?
 And then leaning over, with spoon and with smile,
 Do let me Miss Betsey,—a little more bile?
 Have I no more persuasion with you too, Miss Virtue?
 A little, I'm sure, of this cough couldn't hurt you."

The conclusion is too good to omit:

"Each his ways, each his wants, and then taking our food,
 'Tis exercise turns it to glad-flowing blood.
 We must shun, it is true, what we find doesn't suit
 With our special digestions,—wine, water, or fruit;
 But from all kinds of action one thing we may learn,—
 That nature'll indulge us provided we earn.
 We study her fields, and find "books in her brooks;"
 We range them, ride, walk, and come safe from the cooks.

Thus I look upon shoes whiten'd thickly with dust,
 As entitling the bearer to double pie-crust;
 A mere turnpike ticket's a passport to lamb,
 But a row up the Thames lands you safely at Ham."

All which, if it strikes the reader as it does us as very pleasant, will help to make the volume of 1858 readable some day when it snows or rains.

AGRICULTURAL HUMOR.—Of the Amherst, Mass., Cattle Show, the Springfield *Republican* says: "There is a quaint humor in the making up of the committees upon stock, etc., which is a new feature in "Cattle Shows." For instance: The committee on cattle, upon the principle that 'He who drives fat oxen should himself be fat,' was composed of eight gentlemen whose aggregate weight is over two hundred pounds! Then the committee on calves (most impudent selection) was wholly composed of members of the last Legislature. The committee on fowls were gentlemen from several towns about here, all of them blessed with the name of Fowles. But the happiest thing, and one that really had a good grain of satire in it, was the committee upon maple sugar. This was made up of 'sweet-hearts,' three gentlemen and three ladies who were known to be engaged to be married, being upon it. Poor things! Those who appointed them knew that it was only right that they should nibble a little sugar now, to make some small amends for the future that lies so near before them."

COTTON.

WE have lately received a curious pamphlet from the writer, a personal friend and correspondent, who himself accompanied us to Cuba, and visited the cotton districts, last year, to ascertain for himself what was the prospect of a future supply. He was most kindly received by the planters, and was more than once told he was almost the first great cotton spinner who had visited the source of England's great commercial prosperity—the place where nearly all the cotton they use is grown.

Henry Ashworth, Esq., of Bolton, a philanthropic mill owner, and a far-sighted political economist, is convinced that the capacity of our cotton lands is, to a certain extent limited; and he is alarmed, or his countrymen are, about the supply for the increased and constantly increasing number of spindles; he also asks what is to become of England should the cotton plant of the south be attacked by any disease, as the potato and the vine have been. It is a serious question which the English are endeavoring to solve by introducing a new system of land ownership in India, by looking to Africa for cultivatable land, and other expedients. No fear need exist that this competition will affect our cotton districts, at present at least; but the pamphlet contains some curious matter, prepared so cleverly, that we make use of a little space for its insertion, quite confident that it possesses interest for readers in every section of this extended land. The gigantic strides in the progress of cotton consumption is given in a table which may be thus reduced: beginning with the year 1701, and proceeding to 1764, the date of the first improvement in spinning, we find an annual English import of cotton of from one to two millions of pounds, which was, to a large extent, consumed as candlewicks. Proceeding from the first germ of invention, 1764, to the year 1856, which was the last year of full employment, we find nine hundred and twenty millions consumed.

The number of persons employed in the cotton factories of the United Kingdom in 1856, was 379,213, each one considered to represent three new workers. The above are those actually employed in the factories, who are only a small proportion of those working in all the other branches of the cotton manufacture, which are not subjected to factory inspection. The population of Lancashire was in 1750, 297,400; in 1851, 2,031,236; this great increase being mainly attributable to cotton. In 1760 Liverpool contained 25,787 inhabitants; in 1851, 258,346, or if the adjoining precincts are included, 376,000, besides about 12,000 seamen.

The improved value of property most remarkable, is Chorlton-upon-Medlock, adjoining Manchester. In 1590 it was sold for £320; in 1644 for £300; in 1794 for £42,914; and in 1853 the annual value for the county assessment was £143,151, or, according to the value of the fee simple, the increase is upwards of 50,000 per cent in little more than two centuries, contiguous estates scarcely improving at all.

It is believed, on good authority, that in the neighborhood of Belfast the sewed muslin embroidery trade furnishes employment for about 200,000 women and girls, and the richness and beauty of this work may be estimated from the fact, that a handkerchief, the ground of which cost 3s. may be rendered worth £8, about \$40. The price of a pair of cotton stockings may range as high as two dollars and a half, or may descend as low as a few cents; thus affording, at an easy expense, stockings to the feet of

millions of people who never before have enjoyed that comfort. Going through similar results of the lace trade, we come to the worsted manufacture. Amongst the recent and most important of the advantages derived from cotton, has been its admixture with wool, mohair, alpaca, linen, and silk.

This manufacture of worsted stuffs was sewed for female garments especially for winter, and the damask for household drapery, but the wool of which it was composed did not admit of being wrought into light fabrics, such as the progress of taste required. Hence, only about 25 years ago, the prospects of this trade were gloomy indeed; the demand for lighter fabrics in wool, aroused the energies of trade, and the difficulty was overcome by the opportune discovery of a mode of admixture of a warp of cotton with a weft of worsted, and eventually with mohair, alpaca, or other substances, but principally with worsted; and the successful issue of this union has imparted new life by the creation of a new branch of industry in the worsted manufacture, and without inflicting entire extinction upon that previously in existence. A warp of cotton is made to form the length of the piece to be woven, and the cotton threads, being much finer and stronger than threads of wool, receive within their meshes the weft of worsted shot across, and which, in many of the cloths, imbed themselves so deeply into the substance of the wool that the cotton portion of the web becomes completely hidden, and thus a fabric is constructed of little more than half the thickness and bulk that would have been presented to the eye if the length as well as the breadth of the piece had been of wool alone.

Contrary to custom, instead of an increase of price, increased cheapness by the introduction of cotton has kept pace by the growing demands of taste and refinement. But in the first instance, the completeness of this success was seriously impeded by the difficulty of dying the goods. The usual chemical process for the dying of wool did not answer when applied to a piece of cloth composed of two fibrous substances so dissimilar in their nature, one being animal, and the other vegetable. After a series of chemical operations, more or less intricate, and after great outlays by the dyers, this difficulty was overcome; and in the wide field of raw materials thus opened out, there has been accomplished a most wonderful addition to the extent and variety of modern manufactures.

Cotton, as a raw material, admits of being wrought into garments for the poor at the low sum of twelve cents per pound weight; whilst a single pound of long staple cotton worth eighty-five cents, can be made to furnish employment and wages to the extent of one thousand dollars in articles of decoration for the rich. The material for a full dress of outer garments, if composed of wool, would cost not less than eight dollars, whilst the same quantity of material for cotton, and of more durable quality, would be two dollars to two dollars and a half. The laborer's wife may purchase a neat and good cotton for eight cents per yard, making a dress for fifty-six cents.

The cheapness and utility of cotton have commanded for it a preference which is almost universal, not only for decorations and clothing, but for bookbinding, as a substitute for leather, and for other purposes. The waste cotton made during the processes of manufacture, is wrought into coarse sheets and bed covers, which are sold at from twelve to eighteen cents the pound. The residue of the waste is used for the manufacture of paper, the cleaner portion being for writing paper, and the sweepings from the floors of factories supply a large proportion of the paper mills of Lancashire with

the raw material of the paper which is used for printing books and newspapers.

The animus of the pamphlet is to prove that while all the elements of continued prosperity are in the possession of Great Britain except the command of a regular and adequate supply of raw cotton, this constitutes the feet of clay of their otherwise gigantic power ; they are dependent upon the United States for seven-ninths of their supply, and in view of a possible epidemic, they are convinced that their supplies should be drawn, not from one source alone, but from a variety of sources, as a regularity is needed, and a provision also against the inconvenience arising from scarcity and dearth. An advance of one English penny in the price of cotton amounts to twenty millions of dollars a year. The present stock in Liverpool is only equal to the consumption of three weeks. That from Africa last year would run the entire English mills just *onè hour* ! The entire failure of a cotton crop would entirely destroy, and perhaps forever, all the manufacturing prosperity England possesses ; a reduction of the crop from three to one million of bales, would reduce the manufacturing and trading classes to irretrievable ruin ; millions would be deprived of food, and as a consequence Great Britain would be involved in a series of calamities, politically, socially, and commercially, such as cannot be contemplated without dismay.

In view of this state of things the manufacturers have formed themselves into a Cotton supply Association, for the purpose of diffusing information on any new project for the culture of cotton. But they have already ascertained that obstacles exist, local or political which would render it inexpedient to raise the necessary capital for an investment ; they are looking eagerly, anxiously, to Africa and India ; in the former there can be no hopes for immediate results. The remodification of the government of India may possibly produce a change, and great efforts will now be made to do something practical in the way of European settlers, tenure of land, improved modes of transit and bounties for encouragement.

This is the great problem of the day, and as it concerns us all, but especially a numerous class of the readers of this journal, we have occupied the space necessary for giving the views of those interested abroad ; to the solution of the great question, time must put its seal.

CICERO ON COUNTRY LIFE.

MR. EDITOR : I send you a translated extract from Cicero's well-known essay "De Senectute." If you print it, I shall be justified in announcing the first of Roman orators as one of your occasional contributors. We shall thus be even with the spiritualists. Perhaps you will think I am sending coals to Newcastle ; for it is true that your great-grandfather, James Logan, founder of the Loganian Library of Philadelphia, wrote out a translation of Cicero's "De Senectute," with an extensive body of entertaining and scholarly notes, which was published by his friend, Benjamin Franklin in 1744, and was the second classical work issued in America. My own rendering of the chapter on the pleasures of rural life, is rather loosely made. Mr. Logan's may be better. But most of your readers will never know, unless you print the two together. I promise to keep the peace with Mr. Logan. It will be an honor to be outshone by one who had Franklin for his printer, and who was the secretary of William Penn.

James Logan, in 1735, communicated to Peter Collinson of London, an account of his experiments on maize, with special reference to the sexual doctrine, which was printed in the Philosophical Transactions. This was afterwards printed in a Latin essay at Leyden, with the title *Experimenta et meletemata de Plantarum Generatione*. The same work was republished in London, with an English translation by Dr. Fothergill in 1747.

Cicero talks somehow thus in chapter xvi. :

"I come now to speak of the enjoyments of farmers, with which I am wonderfully pleased. They are hindered by no age, and seem to me to belong most appropriately to the wise man's life. For farmers keep an account with the soil, which never repudiates their sovereignty, and never returns without interest what it receives. Indeed, crops alone do not delight me, but also the vitality and nature of the soil itself. This, when it has taken to its softened and subdued bosom the scattered seed, at first holds it buried, next it swells the seed warmed with its own heat and pressure, and brings forth from it the springing greenness ; which relying upon the fibers of its roots, gradually matures, and reared on its jointed stalk, is enclosed in sheaths, now growing pubescent, as it were. When it has emerged from these, it yields the produce of the ear, arranged in order, and is protected against the depredations of the smaller birds by a *chevaux-de-frise* of bearded spikes. Why should I describe the plantings, growings, and multiplyings of vines ? That you may understand the refreshment and comfort of my old age, I allow I cannot be sated with delight. I pass by the energy itself of all plants reared from the soil, which from the fig-seed so small, or from the grape stone, or from the very minute seeds of other plants and trees, produce so great trunks and branches. As for mallet-shoots, suckers, cuttings, quick-sets, layers, do they not cause these results that they fill every one with admiration ? The vine, for example, is naturally a trailer, and unless sustained, falls to the ground. In order to erect itself, it embraces with its tendrils, as with hands, whatever it meets. Creeping along with a manifold and devious growth, the skill of the farmer pruning it with a knife, keeps it in check, lest it become over-woody, with branches, and too widely diffused in all directions.

"As spring advances there appears at the joints of the branches what is called the bud. Springing from this, the grape discloses itself, which increasing, both from the earth's nutriment and the sun's warmth, is at first very sour to the taste ; then, having matured, it grows sweet. Sheltered with leaves, it neither wants a gentle heat, nor protection from the sun's excessive fervors. What can be more welcome in use, or more beautiful in appearance ? Not only the profit pleases me, but also the culture, and characteristics ; the rows of props ; the yoking together of their tops ; the tying and propagating of vines and shoots ; those processes which I have mentioned— the amputation of some branches, the layering of others.

"Why should I describe the waterings, ditchings, trenchings, by which land is made richer, more productive ? What shall I say about the advantage of manuring ? Homer makes Laertes beguile the sorrow he felt for his son, by tilling the soil and manuring it. Not only are rural pursuits joyful in crops and meadows, and vineries, and plantations, but also in gardens and orchards ; also in the pasture of flocks, the swarming of bees, and the variety of flowers. Not only do plantings please, but likewise ingraftings, than which agriculture has nothing more curious. I finish the subject with the brief remark, that nothing can be richer in use, or finer in appearance than

a field well cultivated. For enjoying this, age not only presents no hindrance, but even invites and allures. To themselves, therefore, let the young keep their arms, their horses, their spears, their club, their ball, their bathings, and runnings. To us, the aged, let them leave the huckle-bones and dice. Let them leave whichever of these two amusements they please, since, without them, old age can be happy." E. N.

Hamilton College, Aug. 8, 1858.

VILLA PARKS.

BY HOWARD DANIELS, NEW YORK.

THE growing taste of our citizens generally for summer residences, country life, beautiful scenery and rural enjoyments, prompts me to make a few suggestions on a subject which I have earnestly desired to see receiving proper attention in this country, since visiting the splendid examples at Birkenhead, Liverpool, Manchester, Sheffield, and many other towns in England.

Villa parks, in England, consist of groups of villas, with gardens of greater or less extent, surrounding a park of from ten to an hundred or more acres, which is owned, managed, and used exclusively by the residents of the surrounding villas. This arrangement enables the possessors to realize the maximum amount of enjoyment at a minimum cost, and by a little care at the outset, it secures congenial neighbors and good society.

The vicinities of most of our cities, particularly New York, are favored with many localities admirably adapted for villa parks. Associations of individuals, who would unite in purchasing the land and making the improvements, would not only obtain choice sites at cost, but would secure a greater number of the enjoyments pertaining to private parks, a higher degree of perfection in the improvements, and these permanently. By the united efforts and capital of little communities, parks of considerable dimensions, improved in the best style, can be created, that no individual would accomplish for his own private purpose.

The villa sites should be well wooded, have fine views of the park, and, if possible, command views of fine distant scenery. They should embrace a lawn around the house, a flower garden, a fruit and vegetable garden, large enough to raise all the better sorts of fruits and vegetables for a private family, and if possible pasturage for a cow and horse; in short, they should embody a complete country home, where the owner, if an amateur horticulturist, may spend his leisure hours in cultivating and training his favorite trees, shrubs, flowers and vegetables.

The park should be centrally situated, well wooded, and if a stream of water is embraced within its limits, which can be expanded into a lake, or made to dash over a ledge of rocks, or play a fountain, it will form one of the greatest attractions. The sight of water in our hot summers always produces a grateful sensation, by imparting at least a semblance of coolness, in addition to the beautiful and varied effects which the influence of atmospheric phenomena beget.

The park should be laid out as the grand central feature of the enterprise, having fine drives, broad walks, verdant lawns, play grounds for the children, &c., and should contain the finest trees and shrubs that can be cultivated. The improvements should be made to produce the greatest possible number of fine scenes, each having a distinctive character of its own, form-

ing a complete picture of itself. There should be provided shady promenades, cool resting-places, in the form of pavilions, temples, kiosks, rustic covered seats, &c., either commanding fine views or terminating vistas. A healthy locality, contiguous to a railroad or steamboat route, situated in a good neighborhood, having pleasant drives and good building materials are matters of the first importance.

Not the least important point in the success of an enterprise of this nature is the laying out and finishing up of the *park at least*, in the most skillful and artistic manner (and if the lots are partially improved so much the better), making a complete thing before the sale of a single lot, and not a speculation, or a paper plan only, sold out at auction, leaving the lot purchasers to finish what the land speculator promised and was paid for, but failed to carry out to its accomplishment.

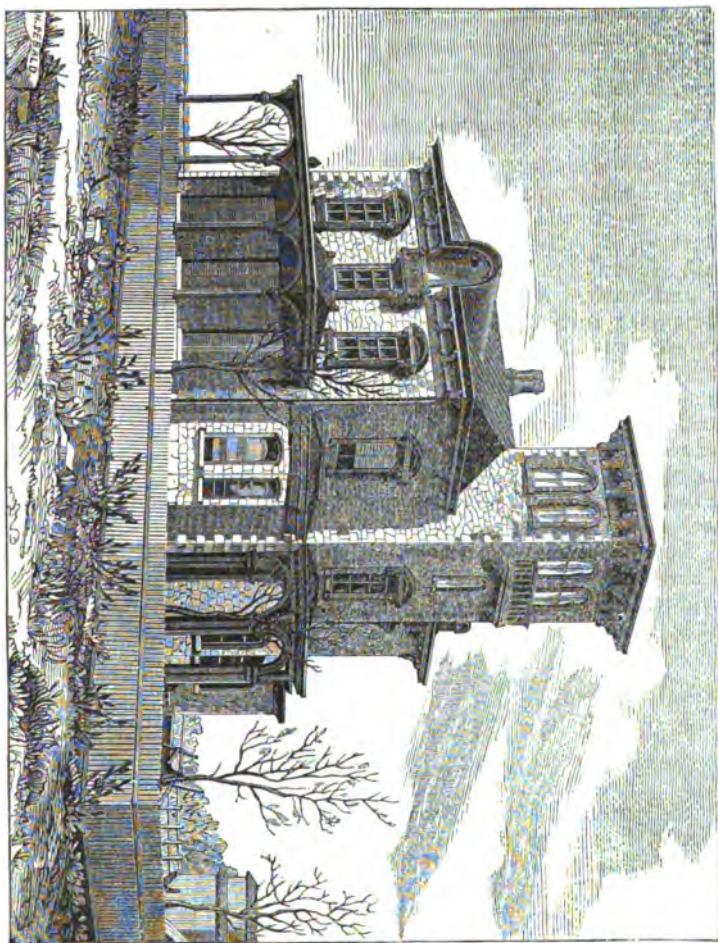
RESIDENCE ERECTED FOR W. GUMMERE,

GERMANTOWN, PA.

THE economy obtained in the plan of this building is remarkable. The contract was taken at \$5,700, exclusive of range, heater, and mantels, while an ordinary "double" square house, erected at the same place and time, with the same number of rooms, and about the same average size of rooms, cost \$7,000. The difference is much the more remarkable, on account of the neighboring house having been completed in plaster externally, with wooden partitions and ordinary finish inside, while the house forming the subject of our sketch is finished externally with hewn stone, the inside partitions in the first, and partly in the upper stories, being of stone or brick, and the finish throughout unusually good and substantial. The amount of waste room however, in the neighboring house, is, as might have been surmised, great; while I think it will be difficult to point to a single cubic foot of wasted room in the plan now under examination. As regards the degree of picturesque beauty obtained in this arrangement, especially when contrasted with a three-story square house, the architect must leave this question to the taste of the readers of the *Horticulturist*.

The plan embraces an entrance hall, 10 ft. wide, with a coat closet, a very cosy "library and breakfast room" with closet for books and china, a large square parlor with bay window, a spacious dining-room with two china closets and pantry, and convenient inner and outer kitchens. Above, are chambers, bathroom, closeting, and the observatory. The verandas are ample and shady. The plan of a side entrance was adopted in order to narrow the front to a proper proportion with the width of the lot (80 ft.) and to avoid too much cutting up of the front lawn with the carriage road. I think the plan, however, would strike the eye very pleasantly, if erected on a wider domain, though in the latter case some modification might be advisable. The effect of a two story building, more agreeable to rural simplicity than that of a towering three story, is here produced, notwithstanding the existence of an actual third story, (level-ceiled over three-fourths of its space,) by the depth given to the cornice on the wall, and the high heads of the second story windows, by which the architectural effect of these features is also increased, while the economy in roofing, &c., obtained in a three story over a two story building, is preserved.

Contributed by R. Morris Smith, architect,
146 So. 4th St., above Walnut, Philadelphia.



RESIDENCE ERECTED FOR W. GUMMERE.

FONDANTE DE MALINES*—(MELTING OF MALINES.)

THIS fine fruit originated, in 1842, in the garden of the late Major Esperen, the well-known and successful pomologist. The first crop was a very large one, and every fruit proved of equal good quality and perfect size.

The shape of this pear seems to have undergone a great change, as it is often the case with *seedling fruits*, which vary in form for a certain time, till that form becomes at last fixed by artificial improvement, by grafting or by natural laws unknown to us. The shape and size of the Fondante in our drawing, is that of a fruit grown in Hon. Marsh. P. Wilder's experimental grounds. The outline is the exact size and form of one of the first fruits, taken in 1842.

Tree vigorous and erect, of a pyramidal form; *shoots*, fawn color, slightly speckled; *buds*, stout, diverging, well set on a broad base, short and pointed; *joints*, regular in two years, but irregular in one year's shoots; *leaves*, middle sized, slightly serrated, dark green.

Fruit, above medium, oblong, or obtuse-pyriform, yellow when ripe, dotted and washed with russet and dark crimson. *Stem* from one to one and a-quarter inch, moderately stout, inserted in a shallow cavity; *eye*, close, rather small, sunk in an even, not deep, calyx.

Flesh, melting, juicy, with abundance of sugar, and slightly flavored; ripens slowly and without decay at the core, from the end of September till late in October, if kept in suitable places.

Like all the fall fruits, it ought to be plucked as soon as it has completed its growth, and allowed to go through the ripening process in a cool room, *rather moist than dry*. As soon, however, as the ripening commences, we always found it better to bring the fruit over to a more elevated temperature. This process develops and completes the aroma of all such pears, which are naturally flavored. This rule applies to almost all the fall fruits, which, if not kept too long in exhibition halls, for instance, are always improved by that rather too high temperature.—*L. E. Berckmans*.

 THE LAWTON BLACKBERRY IN FRUIT.

PUBLISHER'S VISIT TO NORWALK.

It is well known to most of our readers, that the Lawton or New Rochelle blackberry, has been disseminated through the country by Mr. William Lawton, of New Rochelle, in this State, and Messrs. George Seymour & Co., of South Norwalk, in Connecticut. The latter gentlemen have a somewhat extensive and very well managed nursery, which, to the enthusiastic horticulturist, is worth going many a mile to see. But its principal attraction, during the last three years, has been the famous new variety of the blackberry. Until the present season, Mr. Seymour has devoted his attention mainly, almost exclusively, to the cultivation of the plants for propagation. But this year he has appropriated nearly three acres to this berry; in so doing, he has afforded those interested opportunity to judge for themselves by actual observation.

° See Frontispiece.

Early in the month of August, by invitation from Mr. Seymour, when the berries were in their prime, we saw the nursery, and sufficiently to show that the Lawton blackberry is among the most valuable varieties of fruit. The ground thus devoted is less than two and a half acres; from this ground Mr. Seymour was sending to market daily, an average of upwards of ten bushels. He had been picking nine days, and the aggregate amount to the period of our visit, was one hundred and six bushels. Single hills, of some three or four canes, in many instances yielded a bushel each. One day during the season, nineteen bushels were picked. The picking is done almost exclusively by boys; eight being employed. Most of the berries are produced from a field separate from the nursery; half an acre being devoted to the fruit in the nursery; and here most of our observations were made. This half acre, which is understood to have received the same culture bestowed upon the rest of the plantation, had already produced some thirty bushels; and probably at least twenty-five bushels remain to be gathered. This is at the rate of some sixty bushels to the acre. Many good judges who have visited the nursery, placed the estimate even higher than this. But any reasonable fruit-grower, might be satisfied with a yield of sixty bushels of blackberries—*such* blackberries, larger, fairer, better flavored than the natural fruit—from an acre of ground.

"But does not this result involve a larger expenditure in cultivation and harvesting?" inquires some one.

Definite information on this point, obtained from Mr. S., proves that the entire expense of the culture of an acre, after the ground has been properly prepared the first year, falls below fifty dollars, and the expense of picking is but a trifle over one cent a quart. Mr. S. employs his boys by the day, paying them fifty cents each. They have averaged, during the season, from forty to fifty quarts each a day. The berries command a ready market at twenty-five cents a quart, wholesale. The commission for selling is one per cent, or one cent for four quarts. The expense of transportation from Norwalk to New York, some forty miles, about the same.

These are the facts in regard to the culture of the Lawton blackberry. What has been stated on this subject, hitherto, has mainly been theoretical; we are now able to state from actual inspection, not only what the blackberry is capable of doing, and what it probably will do, but what it has done, and what it is doing. The yield from the two acres and three quarters cultivated by Mr. Seymour, cannot be accurately arrived at in season for the present number. But if, when the crop is harvested, it fails of reaching two hundred bushels, we shall be obliged to confess, that, with the means of forming a correct estimate, observation and figures have led us astray.

It may be well to glance at Mr. Seymour's treatment.

The past year, he gave the ground an ordinary coat of barn manure, not more than he would afford a field of corn. The second and third years—the present is the third—no barn manure was used. No fertilizer of any kind was employed the second year; this season the ground was enriched with some two hundred pounds of guano to the acre. The staking is the most formidable part of the culture; though, little labor is required for this after the work is once well done. The ground has this season been ploughed twice, and once run over with the cultivator. Mr. Seymour is confident, from experiments he has made, that no better or more profitable manure can be found for the blackberry, than swamp muck, when it can con-

veniently be obtained. He recommends its use in the crude state, without neutralizing by alkalies.

Mr. S. has produced some twenty barrels of wine from the blackberry this season, which commands a ready market at a greater profit than is realized from the sale of the berries.

FRUIT, DOMESTIC AND TROPICAL.

PRICES AND SUPPLY.

THE American Pomological Society met in New York on the 14th of September, and the members discussed several highly important questions.

At the moment these discussions were proceeding, a change is coming over the fruit market, which it would be well to notice, as having great influence and perhaps extensive consequences. The influence of gold is silently disturbing prices; the increase of our steam marine is likewise silently but surely disturbing our consumption of fruit and vegetables. There is more money employed in transferring products of this description from one climate to another, than most people would, on a hasty inspection, believe.

Every steamship that touches at the tropics, or on their borders, brings more or less valuable and wholesome fruit and vegetables. Oranges and bananas, the latter a rapidly increasing favorite, are cheaper than our northern apples and pears. Pine apples are as plentiful in Montreal and Quebec as they were formerly in New York; you can purchase bananas and other West India fruit in every city of the union, and mostly at reasonable prices. The supply of our own products is utterly inadequate to our consumption. Except the small fruits there is no sure crop. Apples in one section or another are giving us the slip; as for a full supply of good pears it is a problem—amateurs, and those who take great pains or incur a large outlay may have enough. We have had line upon line and precept without careful practice; a barrel of the best pears is too dear a product to place in the store-room, and if you do so, many will decay before you know it, unless you pick them over daily. Apples come to us now and then in "favorable" seasons, but private families have ceased to expect a regular and permanent supply. If the temperance men had in their zeal preached a crusade against these articles, they could hardly be expected to be more scarce with the many; and yet you find few children who do not revel in oranges.

This is a discouraging picture, but is it not true? And if not literally true, does it not approach the truth? Are we making the progress in fruit culture that we hoped to do? Does not the frost, the blight, and the insects make the pursuit of money in this line of business, an uncertain matter? In the smaller fruits profits are realized certainly; but we have not felt of latter years, that it would be safe to plant very extensively or to depend entirely on an apple or pear orchard. The tropics now brought so near our shores, are to be main sources of fruit, if we take the people at large.

Another source is open to the northern man. Bermuda, Georgia, (and soon we may hope, Florida,) are pouring their products into our laps with unwonted liberality. Summer apples made their appearance in New York

in the middle of June, from Augusta ; peaches followed by the 10th of July, and were retailed at twenty-five cents the dozen, having a very good taste indeed, and this while the once plentiful supplies from New Jersey and Delaware are a failing crop, both as regards quantity and quality. Our plums have been disappearing every year.

Thus, changes are in progress which the Convention might well have discussed, and if possible told us what we are to do. The actual result seems to be that a few localities are adapted to a given product. We receive our early potatoes from Bermuda and the south : but both the home product and the foreign are so dear as to have been shunned by the poorer classes during several winters, and substitutes have to be found in beans or flour, the latter most happily for the masses, now at a moderate price ; the rich have been largely supplied with yams ; for a variety of early vegetables we resort to lower Virginia, from whence so large is the supply that it supports a large class of dealers and hucksters who regulate their prices by keeping back an over supply, and who really control the market for a long period of the year. A small number regulate the price of cranberries, and either buy up the whole crop or combine to enhance the price ; this is very possible with a fruit that keeps so long and so well, while in strawberries and raspberries a small over stock of such perishable materials is apt to lessen prices within or below a mere paying point.

If an American convention meets to talk over their prospects, and to the best of their ability to counsel and advise their countrymen, a smaller number of fruit *dealers* regulate the prices that their produce shall bring. A few firms control the trade in tropical products, and agree what they shall be worth ; two or three control the potatoes of Bermuda, and they have not yet agreed to supply us with that best of vegetables, the sweet potato of the south. Another organization buys up another fruit, and the prices, the most important point to the producer, are a matter of bargain and sale between capitalists who have their profit on every thing we partake of.

A pomological convention might well take *the market* for a theme of discussion, and tell us how we shall obtain individually the fruit that is for sale without its going through so many hands. The product is insufficient, and advantage is taken of the fact to make a victim of the consumer. If you raise Black Hamburg grapes, you must sell them at fifty cents the pound, while the city dealer gets a dollar or more for what has cost you so much care and anxiety, in order to pay his enormous rent in a fashionable street. It is no uncommon thing for the raiser to starve, and the dealer or forestaller to make a fortune. An agent in cities who takes a small per centage for vending your produce is an abject ally when you can depend upon his honesty, while a forestaller is one of those *incubi* on society whose very presence is a pest.

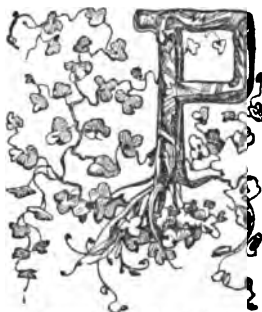
What are we to do for fruit ? How give a healthful supply to that large class who are now assembled in our great cities. The convention points out the way to raise it, but another convention is sitting all the year, plotting to buy in the cheapest market and to sell in the dearest ; they are rich enough to regulate prices ; they make more by tropical fruits than by many of the native, and they are conspiring all the time to regulate what we shall eat. Is there any way by which we can counteract them, and bring the wholesome products of the earth within the means of all ? The conventions in different parts of the Union are doing much to instruct us on the subject of the best and most productive kinds ; they cannot be expected to do more ; with-

out them we should be badly off indeed. Their value may be estimated by visiting a Spanish settlement, like that of Cuba, where nobody takes the least interest in disseminating information, and where, but for the extraordinary climate, with their habits of neglect and indifference, there would be no fruit whatever. Considering the many difficulties we have to encounter, it really is a matter of interest to see the energy with which our people and their representatives in these congresses pursue the subject. They have done much and must not relax their efforts, or we shall fall into a state of fruit destitution. The orchard-house will more and more be resorted to in northern climates. W.

A VISIT TO THE BUFFALO VINERIES.

BY PROF. W. R. COPPACK.

Longsight Place.



PERHAPS there is no feature in the routine of fruit culture, that marks its progress so distinctly to the passing gaze of the sojourner while strolling through the town, with an eye to its horticultural prospects, than Graperies. These prominent, and oftentimes fanciful structures, are becoming not only numerous, but, in fact, a *sine qua non* with all who lay claim to any of that pomonal enthusiasm of the present decade, and which is so readily engendered, by commingling with, and seeing and tasting these delicious luxuries.

For the past few days, in company with a horticultural friend, whose *penchant* lies that way, I have been making a tour of our Buffalo vineries, which, by-the-bye, are more numerous than in any town of its size in the union—and having taken some “notes by the way,” propose to give our distant friends, through the *Horticulturist*, the results.

A prominent feature in this especial culture, is, that unlike the delving processes of garden culture, chiefly done by proxy, this is laid hold of, and passed as a hobby, *appropria persona*. The man of leisure—the business man—the professional man—the divine—all can, and do, enter into the practical manipulation of pruning, thinning, tying, &c. &c., with a zeal that is unmistakable, yet full of earnest pleasure. Then, again, often recur those pleasantries interchanged—those comities and amenities with neighbors, in comparing successes or sympathizing with mishaps, weighing each bunch with dilated eye as to its future *swelling* process—yet unconscious of the insidious sporules that may be forming to mar the exuberant ardor of the *vigneron*.

“*I’m set*”—says a fat man driving a *two-forty*, as he passes a lean friend on a jog trot, coming into town—meaning his *muscats* had set their fruit—“Well, Doctor, how are you prospering?” “Finely—finely—*I’m nearly colored*”—are among the exclamations occasionally heard, and wondered at, by those not grape growers—and then again later in the season, the three, or five pound Hamburg bunch, with its dark rich bloom—its splendid

round berries of equal size—with shoulders to match—ah, who! who, would not grow grapes?—Chorlton, Allen, Prince and Hoare, are becoming household words; while Bones and Offal, Shells, &c., will, ere long, be reported in the “*price current*” of the day. For a dozen years my own graperies stood alone, there being no other in the town. Now, our city numbers nearly, if not forty. May of them large, elegant, and exceedingly attractive, and of course costly. They are of the span roof—octagon—curvilinear—lean-to, &c., &c., with varied finish and architectural designs, enclosing from a dozen or two to many scores of vines. The varieties embrace all the leading popular kinds, with a fair sprinkling of the novelties. The “*border war*” of carion versus *nature* is perhaps a divided question; but all aim at getting a rich and strong border. With an exception or two they are all *cold* houses, and yet rarely fail in ripening both fruit and wood most perfectly. Some of the finest specimens I have ever seen, of the Muscat of Alexandria, are now ripening by Capt. Levi Allen, an entirely self-taught and highly successful grower. Mr. Rich Ballymore is another of the same kind, having a beautiful house, literally filled with fine specimens. His neighbor, your correspondent, Mr. John B. Eaton, has a fine curvilinear structure, the finest of that form put up here. It is kept in *tip-top* order, and may be well taken as a model of skill and good taste. Farther on, we come to Mr. G. B. Rich, whose Hamburgh White Tokay, Syrian, and other varieties, are very fine. Perhaps we should do injustice, did we not particularly mention the Hon. E. G. Spaulding; his fruit had been well-thinned, and it has well recompensed for the labor. The berries were large, even, and well colored. How it does go against the grain to be cutting two or three out of every five. “A bird in the hand” rings in the ear, and practice alone nerves the operator.

Dr. G. F. Pratt has two fine span-roof houses, and is ever famous for his fine specimens. We might also mention Mr. Thomas Stephenson—Mr. Dennis Bowen—Mr. Dewit C. Weeds—alike fine. But *multum in parvo*. Upon a small city lot, pent up, on at least three sides, with walls of brick or timber, resides our friend Mr. William Coleman—whose miniature garden is the admiration of all whose opinions are desirable—with a charming little vineery of some fifteen canes, among which is a Californian variety. He also grows more monstrosities in the fancy strawberry line, more really rich and rare roses, and miscellaneous flowering plants, more fancy out-door grapes, and fruiting plants, than a multitude of his neighbors having a tenfold area. But the vineery of vineries we have yet to describe. This is the commercial vineery of Mr. Horace Williams. It is nearly seven hundred feet long—a lean-to—built somewhat after the *Rivers* plan. It is twelve feet wide, with an eighteen foot border, to be enlarged. The vines are planted, as is usual here, on the inside, and are of the leading varieties, Hamburgs predominating. The whole show remarkable health and vigor. On the wall, at the distance of three feet each, are vines grown in boxes sixteen inches square. These are designed for removal and sale, as they are brought into fruitfulness. Mr. Williams has an extensive Glue manufactory in the vicinity, which has furnished mainly the material for the border. The facilities for watering are excellent—one end of the vineery being near the Buffalo Creek. Water is raised by horse power into a large cistern, from thence runs a pipe along the back wall, the whole length of the house, having faucets at every short distance. There are nearly seven hundred vines in the house. The structure is got up cheaply, yet durable, appurtenanced with all that is necessary for the successful growth of the grape. The vines are now chiefly

two years old, and certainly do great credit to Mr. Williams' self-acquired skill. To stand at either end of this imposing range, casting the eye through the whole vista, is indeed a noble sight—a panorama of exceeding beauty.

HOW TO CALCULATE THE COST OF YOUR PROPOSED NEW HOUSE.

BY CHARLES DUGGIN, ARCHITECT, NEW YORK.

It is always a very difficult matter, with parties about to build, to ascertain what the house they propose erecting will probably cost. As a general thing, the person purposing building cannot obtain anything definite without first going to the trouble and expense of having his plans and specifications made, so that he can dissect the quantities of the different materials required, and so arrive at the desired price.

This system generally leads to dissatisfaction, for it is mostly the case that the person about to build has fixed upon the price he wishes to spend before he commences his plans, and misleads himself into the belief that he can obtain a certain sized house for a given sum, his architect's opinion to the contrary notwithstanding, using as his argument that he has certain unusual facilities for obtaining certain materials, or doing certain portions of the work, and also, further, that such and such a person built his house for such a price, and why should he not be able to do so?

Now, to obviate these difficulties, I purpose giving a simple rule for ascertaining the approximate outlay, without being necessitated to first have your plans, &c., prepared; and one that I have generally found to work out correctly.

Having decided on about the style and character of house you require, and what degree of finish or ornamentation you want outside and inside, look around in your neighborhood for such description of house, and ascertain from its owner what it cost. Having obtained the price, then measure the size it occupies on the ground, and also the different heights, and "cube" the whole, so as to arrive at the number of cubic feet of space occupied by the house. Then reduce the number of dollars the house costs into cents, and divide the cents by the cubic feet, and it will give you how much the house you require *will cost every cubic foot of space it occupies*.

When you have ascertained how much such a style of house as you require will cost for every *cubic foot of space* it occupies, set to work and sketch out the plan of a house to suit your requirements; having done so, reduce the same into cubic feet, and when you have ascertained the number of feet your proposed house will occupy, multiply them by the price per foot your neighbor's house cost, and it will give you the approximate cost of your proposed house.

By having the above figures at your command, it enables you to increase or decrease the size of your house, so as to come moderately near to the sum you wish to spend, all of which can be done before you commence to have your working-drawings and specifications made.

To make the above more easily understood, I give below the mode adopted for ascertaining the number of cubic feet of space occupied by a house. It is simply to multiply the width of the house by the depth, and the product

will give you the number of superficial *square feet* in the house ; the square feet multiplied by the height will give the number of *cubic feet*.

In taking off the size of the house, do not measure in any of the verandas, as they are not *room* in the house ; at the same time, in planning your own house, you must bear in mind not to put in more veranda, in proportion to the size, than your neighbor has, unless you add a proportional amount to your cost. In measuring your height, include about one foot below the cellar-floor, add in the thickness of the different floors, and when you come to the roof, or attic, make proper allowances to suit the slope of the roof, for if the roof be steep, of course measuring to the ridge or top line would not be correct—so, allow accordingly.

In naming the sum a house will probably cost, I generally find it best to leave out the mantels, grates, furnace, hot-air pipes &c., and plumbing, as these vary so much in different houses ; but the drains, cistern, cesspool and painting—indeed, everything, with the above exceptions—I include in my figures, and I think a party entering into calculations would do well to adopt the same plan. Of course, if he includes the items I name, in the cost of his neighbor's house, he can rely upon their being included in his own.

In future numbers of the *Horticulturist*, I purpose giving some plans and views of Gountry Villas that have been erected from my designs, accompanying which, I will state the price they cost per cubic foot so that a party purposing building may be able more readily to decide on the style to adopt for his new house, so as to meet his ideas of cost.

POMOLOGICAL SOCIETY OF GEORGIA.

THE Annual Meeting of the above named Society was held at Athens, on Tuesday, August 3d. The officers chosen for the ensuing year were as follows : L. E. Berckmans, President ; Richard Peters, Vice-President ; Wm. N. White, Secretary ; James Camak, Treasurer ; Wm. N. White, Chairman ; Richard Peters, J. Camak, E. Bancroft, J. Van Buren, Committee *ad Interim*.

A Corresponding Committee was elected by an amendment to the Constitution, to place before the above named Committee any new fruits originating in their respective localities, on which were placed Right Rev. S. D. Elliot, Savannah ; D. Redmond, Augusta ; R. Peters, Atlanta ; Charles Collins, Macon ; Thomas Camak, Columbus.

L. E. Berckmans, R. Peters, D. Redmond and W. N. White, were appointed Delegates to represent the Society at the next meeting of the American Pomological Society.

At the conversational meeting, there was a discussion upon the Curculio, in which Messrs. Berckmans, Van Buren, Redmond, Camak, White, and others took part.

The Fruit show was good, considering that the frost the last of April destroyed all the fruit in the upper part of the State.

Mr. Van Buren and Mr. Legg, could give us little except their presence, instead of their usual fine list, and Messrs. Berckmans' collection was mislaid on the way and failed to come to hand in season. The following is the list of exhibitors :

Peters, Harden & Co., of Atlanta, exhibited : *Pears*, 34 varieties. *Peaches*, 16 varieties. *Nectarines*, 1 variety—viz: Stanwick. *Almonds*, 2 varieties.

Apples, 10 varieties—viz: Yellow Horse, Farrar's Summer, Hamilton, Red June, Aromatic Carolina, Rhodes' Orange Pearmain, Jones' Summer, Gore, White, Yellow June, and 1 nameless. *Plums*, 6 varieties—viz: Yellow Gage, Imperial Gage, Bingham, Coe's Golden Drop, August Blue, and Long Scarlet. *Grapes*, 7 varieties—viz: Clinton, Diana, Catawba, Isabella, Lenior, White, and Concord. *Mulberries*, 1 variety—viz: Everbearing. *Quince*, 1 variety. *Apples*, 78 varieties.

This was a beautiful collection; nearly all the specimens being well grown, especially the Pears. The Georgia Cling will be fully described hereafter, it being a variety that should be in every garden.

Prof. J. D. Easter, of Franklin College, exhibited 1 Apple, a very fine summer variety from Ohio, unnamed; 1 Pear—Duchesse d'Angouleme—fine; and a very attractive list of 18 varieties of Peaches.

Of these (Mrs. Wray's Cling), was a new seedling, and merits a full description hereafter. Total, 19 varieties.

The frost, the last of April, destroyed every fruit in Mr. Van Buren's large collection, except 2 Apples, viz: Julien and Horse; 8 Pears, viz: Bartlett, Beurre Diel, Beurre Bosc, White Doyenne, Seckel, Vicar of Winkfield, Stevens' Genesec, and Louise Bonne de Jersey—total 10 varieties.

E. Bancroft, of Athens, exhibited 34 varieties of Peaches.

Mr. Bancroft's Peaches all were extra fine and, taken together, exceeded in beauty, those of any other contribution. Stump the World, Walter's Late, Prince's Paragon, Burden's Rareripec, Green Catharine, Old Mixon Cling, Chereuse Tardive, Large White Cling, Brevort's Morris, Bloodgood's Late Green, and Old Mixon Free, were particularly fine.

Wm. N. White, of Athens, exhibited 86 varieties of Pears. *Quinces*, 2 varieties. *Apples*, 12 varieties—viz: Rhode Island Greening, Buckingham, Shockley, 1 nameless, sweet; Landrum, Meigs, Yellow Meadow, Nickajack, Summer Queen, Tewksbury Winter Blush, James River, Summer Sweet. *Peaches*, 35 varieties. *Plums*, 14 varieties. *Nectarines*, 1 variety—viz: Elruge. *Grapes*, 1 variety—viz: Isabella. Total 151 varieties.

Hon. I. L. Harris, of Milledgeville, exhibited a Seedling of the Seckel Pear, to which the Committee gave the name of Harris' Seckel (good).

Col. J. C. Branch, of Watkinsville, exhibited 6 varieties of Peaches, consisting of unnamed Clingstones; one variety of which was the largest seedling exhibited, and was named by the Society, The Challenge, a description of which will appear hereafter. Also, a specimen of Isabella Grape. Total, 7 varieties.

J. H. Gray, of Clarke county, exhibited 3 varieties of Apples, unnamed; 2 varieties of Pears, unnamed; 1 variety of Peach, viz: Pace. Total 6 varieties.

Mrs. Hull, of Athens, exhibited 3 varieties of Grapes, viz: Grove End Sweet Water, White Frontignan, and Muscat de Lunell; 3 varieties of Peaches, 2 unnamed, Early Crawford Peach, and Bingham Plum; and 6 varieties of Apples, unnamed. Total 13 varieties.

Mrs. Franklin, of Athens, exhibited 22 varieties of Pears. *Apples*, 6 varieties. The specimens exhibited by Mrs. Franklin were remarkably fair and well grown.

Mr. Micheli, of Athens, exhibited 2 varieties of Apples, viz: Buff (very large and fine), the other variety unrecognized.

Dr. G. E. Smythe, of Athens, exhibited 4 varieties of Pears. *Peaches*, 6 varieties. *Plums*, 6 varieties. *Grapes*, 2 varieties—viz: Warren, and

White Muscat. *Apples*, 4 varieties, Russet, Swaar, and Autumn Pearmain. Also, 1 Lemon, large.

Mrs. H. Camak, of Athens, exhibited 12 varieties of Plums. *Pears*, 25 varieties. *Peaches*, 17 varieties.

Dr. M. A. Ward, of Athens, exhibited 37 varieties of Apples. *Pears*, 31 varieties. *Quinces*, 2 varieties—viz: Portugal and Orange. *Plums* 12 varieties.

A few fine vegetables were displayed; Mr. Sledge exhibiting the very best Irish Potatoes we have seen grown in the State; and Mrs. F. W. Lucas some extra large Beets and Tomatoes.

In looking over and comparing the different lists, we find 568 lots of fruit were exhibited, comprising 368 varieties, of which there were: *Peaches*, 99; *Apples*, 74; *Plums*, 34; *Grapes*, 11; *Mulberries*, 1; *Pears*, 144; *Lemons*, 1; *Quinces*, 2; *Almonds*, 2.

While errors of names were noticed in the collection of amateurs, it was gratifying to see the correctness of names under which those of the Nurserymen were exhibited; and, from sufficient experience, we are prepared to say, positively, that no Nurseries can be more honestly conducted or more worthy of confidence than those in our own midst. In respect to correctness, great improvement is manifest the last two years, and we no longer see the same Pear, Apple, &c., exhibited under three or four different names.

L. E. BERCKMANS, *President*.

WM. N. WHITE, *Secretary*.

"HINTS ON RURAL ARCHITECTURE."

BOATHOUSES AND PLAYHOUSES.

SOME of the readers of the *Horticulturist* who are so fortunate as to reside on the shores of the smaller lakes so numerous in our northern States, may be glad to learn the experience of a dweller in a similar locality in the construction of boat-houses; for every one knows that the first step toward keeping a boat in good condition, is to provide it with a shelter. Left on the beach it is not only knocked about by waves, but the influence of sun and rain open all its seams, and crack its boards until it "leaks like a riddle." The common practice of drawing it up under a shelter on dry land, by means of inclined timbers or "ways," is also injurious as tending to rack and strain it, while it also demands a degree of muscular exertion not always convenient or pleasant to supply.

After trying several plans, I have been perfectly satisfied with one of the simplest possible. First framing together the sills, I nailed upon them plank, two inches thick, forming a strong and smooth floor. This was floated to the water's edge opposite the point where the building when located, was intended to stand, and "blocked up" so as to keep its level, while the posts and plates and studs were framed and raised in the ordinary manner. After "siding it up" with strong plank as high as the water was expected to cover it (about four feet), the whole frame was shoved out to its chosen location (a smooth patch of sandy bottom about thirty or forty feet from shore), sliding on two long poles laid under it like ways for launching. Being thus placed, the rest of the work was easy, a raft being made which

could be secured against either side of the building, to afford a footing for the carpenter while putting on the clapboards, &c.

The boat-house, as now completed, is fifteen by twenty-five feet, its sills resting directly on the bottom, with posts about nine feet "between joints," which are submerged nearly three feet, so that there is height enough for a man to enter beneath the eaves. A platform or upper floor is laid just above water level, extending across one side and one end of the building, with a width of about five feet; while along the other side runs a ledge eighteen inches wide, just enough to walk on. In the open water-space between, a couple of boats float, "ready—aye, ready" for service, one suited for fishing, with anchor and lines on board; the other, a small iron boat of Francis's patent, with oars and cushions complete, ready at a moment's warning for the use of the ladies of the household, with whom it is a great favorite, from being perfectly water-tight, and always as dry and clean as a



BOAT-HOUSE.

carriage, so that skirts are in no danger of staining. They are taken in and out through a wide door in one end of the building, which extends nearly to the sill, and upwards of four feet above water. The building is reached from the shore by a slight bridge.

I need hardly say, that where all is so entirely in readiness for use at any moment, many a short sail or sunset row is enjoyed, which would be foregone were any preparation necessary.

The building also makes a capital bathing house, having on its floor two or three feet of pure water, which is constantly changed by the action of the waves through a narrow opening left round the walls just above the sills (observe that this opening should be only just sufficient for this purpose, say three or four inches wide; if larger, it will admit too much swell in a windy day, and the boats will knock about and chafe against the platform). A few pins, hooks, and shelves, hold simple conveniences for the toilet; others are stored with hooks, lines and other apparatus for angling; and whether for bathing or boating, the whole establishment is, if not very elegant, at least is complete and comfortable as need be.

Of course, such a structure is best suited only for our smaller lakes, the level of which does not vary more than a couple of feet or so, and where neither heavy waves nor freshets are liable to injure it; but there are many country residences situated on such waters, where the pleasures and advantages of such an aquatic building would much more than repay its cost. The first I built in this way was of rough hemlock lumber, costing perhaps \$75. It stood safely for seven or eight years, during which we had "our money's-worth" out of it many times over, and was finally crushed by a huge field of ice driven against it by a storm, while the lake was opening in the spring. My second edifice is a neater structure, in which I have gone to the extravagance of planed flooring, ceiling, and clapboards, and a coat or two of paint, as well as some minor vanities, such as a flagstaff and vane; and I intend to protect it from such accidents as destroyed its predecessor by a pier of crib-work filled with stones. This is to be built on the ice outside the boat-house next winter; and I may remark that a boat-house itself may also be built on the ice, and allowed to settle to its place in the spring. So I built my first, but the discomforts and delays of carpenter's-work in cold weather were such, that I preferred next time to wait till June and do the work as first above described.

It must be remembered, that the ice which freezes fast to the boat-house, is liable to be upborne by sudden thaws, so as to raise the building from its place. This will do no harm, unless it should lift the posts out of their mortises in the sills, which would ruin all; so remember that these timbers must be firmly pinned together. There is also a horizontal movement of the ice, backward and forward, to a small extent all winter, caused by its expansion and contraction from changes of temperature. This will not injure a light and yielding structure such as I have described, which slides backward and forward on the bottom as the ice drives or draws it; but I have seen it move a heavy pier and crush in a stone wall, inch after inch.

I enclose a rough sketch of the form of my boat-house, which, as I have proved it, I can recommend for any suitable situation. If the builder desire, he may ornament and decorate it *ad libitum*, even to the extent of the precedent on Windermere, where a boat-house was crowned by a steeple "for distant effect." The cut and description, however, I believe to include all that is essential.

If only some of the readers of the *Horticulturist* have opportunities for boat-houses, most of them have opportunities and suitable tenants for PLAY-HOUSES.

The best plaything for a child, is not a splendid and complex rattletrap, but some simple and rough thing which may be applied to various uses and purposes, and aid to stimulate invention and contrivance. The best of all such things for a girl is a *house*.

My daughter at six or eight years of age took possession of a tiny shed, originally made to shelter a bee-hive. Sundry articles of furniture, of the most impromptu style, some of them requiring a good deal of imagination to supply their deficiencies of construction, were added by degrees;—a board for a table, a box set on end for a cupboard, some blocks for chairs, a scrap of old carpeting, a broom with a broken handle, half a dozen odd and cracked teacups, &c. By-and-by the open side was boarded up, a hole being left for a window and another for a door, which was a board hung on two bits of leather. The pleasure derived from occupying this queer cabin was so great and enduring, that when next carpenters were busy about

repairs of our own house, I had a little one built on purpose for our rising generation, the success of which has been so great that I here describe it as a hint for other parents and for the benefit of little people in general.

"Appletree Cottage" as it is named from the sheltering boughs which overhang it, stands on a cross-walk in the garden. It is built of pine boards, without any timber frame, eight feet by ten on the ground, and six feet high at the eaves, neither ceiled nor plastered, but open within to its roof of planed boards. It has on each side two windows, each a four-light sash of 7 by 9 glass, hung on hinges for convenient ventilation; and a real batten door, five feet high, with a knob-catch, and genuine lock and key to secure the property or privacy of its owner.

This was the contribution of Paterfamilias to his daughter's amusement, and it was at once occupied with the intensest satisfaction. Little by little, as in the economical and thrifty progress of older housekeepers, articles of furniture were added. First, there came a present of a real tea-table, with



PLAY-HOUSE.

leaves to let down, suited to the dimensions of the apartment, and three chairs large enough for small people; the next acquirement was a set of small tea-cups and saucers. A tin teapot and a set of knives and forks followed from one quarter, a small broom and dust pan from another; some window curtains were put up by the united exertions of the proprietress and her friends; and at last Grandfather completed the whole thing by sending an "old-maid cooking stove," a little affair but fifteen inches square, but perfectly capable of baking and frying and boiling, and competent to make the apartment as hot and happy as need be.

In this small edifice there has been probably more genuine enjoyment than in most palaces, and I doubt not that the young princesses of Windsor would find it a happy exchange for the stately halls in which they, poor little things, are doomed to dwell. Not only are tea drawn and currant-jelly made, and biscuit baked, and fish fried for hospitable entertainment within its wooden walls, but even the pains of ordinary housekeeping are here converted into pleasures. Mopping and sweeping, dusting and window-

washing are enjoyed exceedingly, and half a dozen times a year there is a delightful general house-cleaning, which recalls to mind Hopkinson's famous description of that annual epidemic, and realizes his recommendation that a small separate building should be provided near every homestead, where its subjects can spend the force of their excitement without disturbing the peace of the household itself.

In all this, there is not only amusement, but wholesome exercise, and even useful practice in housekeeping; and we believe there rarely were twenty or thirty dollars better spent than those which erected and fitted up this little establishment. I recommend it for imitation by the parent where children are reduced to "make-believe" in the corner of their nurseries with tiny pasteboard houses and lilliputian furniture not large enough for dolls. Give them a real cabin in a corner of the garden; do not make it elegant, and do not complete it at once, ready to their hands; but let it be a plain affair and add to its appointments little by little, until it gradually becomes parlor, kitchen, hall, and library all in one. If it is found a pleasant and lasting amusement for genuine and unspoilt children, they may be grateful for the hint to the present correspondent,

OWABGENA.

GRAPES.

BY C. P. BISSEL, EAST AVENUE NURSERIES, ROCHESTER, N. Y.

WE hope to add a few words to those in which Mr. S. Miller, in your June number, expresses his interest in the culture of the grape. At this time, when not only plums, apricots, and nectarines, but our peaches and cherries are affected by successive and serious diseases, we turn to other fruits, hoping that we may find some which, by moderate care, can be guarded from the inroads of inscrutable disorders.

Mr. M. asks, "Do we not sometimes work and trim too much?" We reply, that there is a vast deal of labor performed which cannot be dignified with the title of work in any useful sense. An immense amount of toil is expended upon the grape vines of the United States which is not only useless, but positively hurtful. As to trimming, we reply that if that work be employed in its proper sense, there is no person who does "trim too much." But let us say that a vast deal of the hacking and hewing of our vines in the winter, and of the pinching and cutting of our branches, leaves, &c. in the summer, is too disgraceful to be called trimming.

People forget that all the portions of the vine, roots, stem, branches and leaves, grow naturally in precisely the correct relative proportion to each other. People forget that it is only because man has brought most of the fruits into an artificial condition, that he needs to regulate the growth or proportion of the several constituents of the plants.

One man of our acquaintance, while amputating by the cord, remarked, that "whatever was worth doing at all was worth doing well." In this we agreed with him; but in the meaning of the word *well*, we differed. With him pruning *well* meant cutting off three-fourths or nine-tenths of the results of last season's growth; with us it means judiciously lessening the quantity of wood, so as exactly to balance the vegetative powers of the roots, and so that the reproductive strength may not be too much taxed by an excessive

exhibition of fruit. The leaves are the lungs of the plant, and it is well known to be the return sap which ministers both to the growth of the plant and to the perfection of the fruit. Lessen too much the breathing surface of the leaves, and the grapes suffer a consumption before their maturity.

Our theory for pruning is simply this ; because we have not in our cities, in our villages, or even on most of our farms, the requisite unappropriated space to allow to the vine its natural growth, we must regulate that growth and retain it within the space that we do possess, with two objects in view :

1. The health of the vine.
2. The maximum product of good fruit.

The remarks of Mr. Campbell, in the September number of the *Horticulturist*, are so exactly to our mind, as to supersede much we were about to say on this subject of pruning.

Mr. Miller's questions we take pleasure in replying to, and if we err hope that he will treat it with the leniency with which we know that he is accustomed to treat those who differ from him in some opinions. Mr. Miller's first question is : "Where does the exact point end of foxiness or fragrance and aroma commence?" Mr. Miller says "I love the smell of a rank fox grape. We think that the foxiness ends just where we begin to like the grape, and where no unpleasant reminiscence, flavor, astringency, acidity, or puckeriness is left after eating the grapes. A grape that we don't like is apt to be foxy in proportion to our distaste for it. Our opinion is that foxiness exists to its superlative extent, as Mr. M. says, "in the forest ;" that it extends through all the wild grapes of the woods, Charter Oak, Early Amber, and dozens of others in a gradually lessening series, until it reaches that culmination of excellence, the Diana, where no trace whatever of any such thing is to be perceived.

The second question is as to deep culture, &c. All vegetable organization and growth is supported by the appropriation of sufficient pabulum, by means of the roots to give to the ascending sap a strength superior to simple water. "Our old residents of the forest do not run their roots down," because they dislike to go down deep into a shaded and undrained subsoil which has lain undisturbed for centuries ; and they peculiarly affect the only warm and well aerated soil which is within their reach, viz., that which is "close to the surface under the leaves." In this position, also, the carbon of the decomposing leaves is a manure, and a right stimulating manure, too, to every pore and cell of stalk, leaves or fruit. These same old vines taken out from the forest, and all their roots placed in a deep, rich, loose, well-drained border, will make more wood, and more and finer fruit than they ever did before : provided they have the same space for their branches and leaves to spread upon.

As to the "young vines that have been set out in May," they will send their fibrous roots where the soil is warmed by the beams of the summer's sun, and where they can appropriate the ammonia brought by showers from the atmosphere. They know as well as we, that this ammonia is absorbed by the first soil with which the water brings it in contact, and they seek that stratum of earth with every possible fibril ; because the very spot and the "border a foot wide" that they are planted in is shaded by their own leaves, and the broad surface of their own foliage so sheds the water off, that the surface of the ground, a short distance from the plant, will be moister, warmer, and better supplied with ammonia than immediately around their own stems. As to Mr. Miller's "border 5 feet wide and 3 feet deep." It

is an old Latin proverb, that so far as the branches of trees or plants ascend into the air, so far in the search after nourishment do the roots spread themselves in the fair bosom of the fertile earth. Now, even though we take the sayings of the Roman sages with due grains of allowance we all must know that grape vines with branches extending to 20 or 30 feet in length, will not submit to have their roots confined to a border of only 3 or 5 feet in width, no matter how fertile it may be made with the old boots of a nation or the old mortar of half a city, unless to that fertility we add in some way an ammoniated moisture suited to the necessities of the plant.

The fibrils of the roots go seeking whatever the plant requires, and while they will not place themselves in stagnant water, or impervious subsoil, they will not long hesitate with the query whether the required nourishment is to be obtained by progressing laterally or perpendicularly, provided it is within their reach.

"CAN PEARS BE GROWN PROFITABLY FOR MARKET?"

BY W. R. COPPOCK, BUFFALO, N. Y.

I HAD promised myself, ere this, to respond to the article in your May number under this caption, but time and circumstances have alike prevented. It requires very little confession on my part to admit that I am the unfortunate individual there charged with "constitutional obstinacy," &c., and the hypothesis perhaps indirectly claimed is, that I am the cause of all this sad failure in pear culture.

It is said Teucer flung his shafts from behind a shield, but, alas! no shield has protected his victim. "Confess! confess!" echoes the clarion's blast, while some "Van Mons" sends me the *Country Gentleman*, with the article "scored" for my especial benefit; anon, I have the *Genesee Farmer* (would that all farmers were gentlemen), having the same reference. To say the least of it, it is certainly an ungracious act that lugs one's friend into the breach, to bolster up a weak position.

Now, by your permission, and to save the "Beurrès," I will "confess" nor tell no tale of woe. I am a pear grower, not, perhaps, on so large a scale as Mr. Allen. I have a thousand, mayhap more. My trees are my delight, yet tilled with anxious care, and have thus far greeted me with grateful returns for the labor bestowed. But who, let me ask, that has written for and read a dozen volumes of the *Horticulturist*, would be so ungracious as to expect his dwarfs to do duty, when the lord of the manor neither clothes nor feeds his subjects. Let us see if we cannot understand these sad effects by looking at the cause. "We are all mortar (mortal), here to-morrow and gone to-day!" was an oft-expletive of one good soul, who was prone to indulge in the dreamy fit of twilight musing, "doing good business in the future," when the mind, wandering from things sub-lunary, painted with prismatic colors, the splendid creations of the "Hesperides," where reign supreme the noble Duchess and the good Bonchrétien, with hosts of Flemish Beauties, Doyennés and Beurrès, with something Golden, like the Orange pear. Supposing them realities of his own, instead

of the more sober delving, pruning, manuring, grub-hunting, slug-killing processes of this terrestrial sphere, which the anathema from the garden has rendered imperative, to grow fruit successfully, and especially the dwarf pear for profit.

A most important point to start with is, a healthy, vigorous, sound constituted tree. Who does not know that a dwarf once stunted cannot be recovered? it may live, it may grow, and for a time exist, but never, in my experience, will it laugh and grow fat. Herein lies one cause of failure why pears cannot be grown profitably for market. When Mr. Allen and his "obstinate" friend commenced pear culture, an unlucky invoice of many hundred *cheap* dwarf pear trees, from a New York house, landed in our city. These were divided and sub-divided among the "enthusiastic coterie," infected with the pear mania, Mr. A. taking the lion's share. These, he tells us, were planted, cut down, and grafted, &c., &c. This lot of trash, then, constituted the ground-work of our plantations, and well may those gentlemen say, when asked how their pears are getting on, "Blurt out the fact, dwarf pears are a humbug."

Now, no one for a moment doubts Mr. Allen's skill as a theorist, nor as a racy and entertaining writer on rural matters; but did he pursue the same loose system of selection, feeding, breeding, and general culture of his Devons and short-horns that he has with the practical details of growing dwarf pears for a market, where would be his herd to-morrow? In my own case, having got rid of that stock, I purchased some thousand thrifty, well-grown trees from Messrs. Ellwanger & Barry, Rochester, and have taken care of them, as well as I know how. I read the *Horticulturist* regularly, and got many a good idea from "Jeffreys." Jeffreys' views were chiefly good, and I must say my labors have been well rewarded. A few leading varieties make up my main collection, to which are added a score or two of novelties, to follow in the wake of my friends. We have a ready sale for the fruit, chiefly at five dollars per bushel, wholesale; seldom less than four dollars for the small varieties. My dwarfs yield me annually, with occasional exceptions, fair crops. Last season I took a barrel of Vicar of Winkfield from three trees; this year I can do the same from two trees, as also from the Glout Morceau, the Bartlett, Louise Bonne de Jersey, Stevens' Genesee, Onondago, and some others, are nearly as prolific. In August, I took over 1,700 pears from four Dearborn Seedling trees; about the same rate last season. To-day I have trees propped up on all sides to sustain the crop, and they are the same props, that were used for like purpose, for the same trees last year. I have a row of Bartlett; the seed I took from the Louise Bonne, and sowed for the stocks, in the autumn of '54. In '55, I bedded them. To-day those trees have from 30 to 45 sound, good-sized pears, which will sell, at retail, for four to six cents each. I have Beurré Diels, dwarf, three years old, with equally as many on. I have Beurré Goubault, dwarf, four years old, with 84 fine pears on, worth two or three cents each, &c., &c., with plenty more to match; more, however, I will not enumerate, as these were seen by Mr. Allen, recently, while the fruit was on the trees, and, therefore, he will bear me out fully in the statement. I must also say, in all candor, I hear not the "lachrymose" tone of your correspondent among the cultivators of the pear, save the "coterie," I chance to meet with in our neighborhood; but, on the contrary, have frequent cheerful invitations to see their fine fruits, of which they feel exceedingly proud. From the pear on its own roots, I have, as yet received little profit. From

several hundreds, planted at the same time as the dwarfs, before spoken of, I have had but occasional specimens; nevertheless, from these I entertain great hopes for the future. The blight and borer have taken from me an occasional tree; their place I fill up with other, though smaller.

Now, let me ask, what further can I confess that my "constitutional obstinacy" withholds? Surely it cannot be on the score of courtesy. 'Tis said misery loves company! Can it be Mr. A. desires that I should do as he has done? Forbid it ye gods. I do fear, however, Mr. Allen may think I have confessed abundantly; nevertheless, this subject is not without a moral. It teaches a great practical lesson, and from it we learn the great loss of time and capital in attempting to do manual horticulture in a cozy chair. "Talking fruits" will not grow them. "The pesky trees" won't take care of themselves. That cold retentive clay won't be loam, and was never intended to grow dwarf pears in.

"Not laughing earth, whose bosom opens
To clothe this world bright as some fairy bower!"

That rude Timothy, envious of the puny dwarf, enrobed it with a mantle of green so completely as to hide its diminished head, while the pestilent caterpillar, the abominable slug, a streak of bad luck, the "constitutional obstinacy" of his friend and the annihilation of his orchard, drives him to the post, and he asks, "Can pears be grown profitably for market?"

A REPLY TO THE REMARKS OF JOHN B. EATON, OF BUFFALO, N.Y., IN *HORTICULTURIST* OF SEPTEMBER, 1858.

BY JOHN FISKE ALLEN, SALEM, MASS.

YOUR correspondent speaks first of grape houses, but does not agree with Mr. Saunders in his "belief that a curvilinear roof does not in itself possess any important advantages, and that the gain of more light and less opacity (which he is willing to admit) is the only superiority which such houses possess." He adds, "for myself, I am strongly in favor of curvilinear houses, being satisfied, from my experience and observations, that they not only do possess 'important advantages' over right-lined houses, but are not so much more expensive as Mr. Saunders seems to believe." Now I wish to record my assent to what Mr. Saunders says, and my dissent from the opinion of Mr. Eaton. The experience of a quarter of a century confirms all the facts as stated in my grape culture, relating to position, lean-to or span-roofed houses, as also to the compost for the border. Houses fronting S.S.E. to S.S.W. are the best placed. Grapes, to do well, must have a good soil, and if the natural soil is not suitable, it must be removed and other substituted. I care not whether this be sod from an old pasture, or compost of loam, leaf-mould, stable-manure and decomposed carcasses of animals. Inexperienced persons would do well to use in their compost nothing but decayed matter, either animal or vegetable; hundreds of fruit trees are yearly destroyed by planting them in green manure. Amateurs have read that pears require a rich soil; consequently, the trees are obtained, the hole dug, a barrow of fresh cow, or stable, or still worse, hog-pen manure is placed by

the hole, the tree is planted and covered with this manure, and the soil filled in over all. No tree can live with such treatment; the roots are as effectually killed as if burned in the fire. The same result will take place if a dead animal is buried near the roots of a tree or vine, so that in decomposing the liquid comes in contact with the roots. If placed in the border, all green manures or animal substances must be put under the surface, where they will not be reached by the roots the first year.

Mr. Eaton asks what is the difference in the Royal Muscadine and the Chasselas de Fontainbleau, and it is to this query and some others to which I care mainly to reply.

This is his language : "I should like to be positively resolved whether there is a Royal Muscadine, which is distinct from and superior to the Chasselas de Fontainbleau. It is contended by some that there is such a grape. I suppose that there is little if any doubt that what are usually sold for Chasselas de Fontainbleau, Golden Chasselas and Royal Muscadine, together with two or three other names, are identically the same. If some of your correspondents who possess the so-called genuine Royal Muscadine will give an account of its peculiarities, and a sketch of its history, if possible, I have no doubt that it would tend to clear away some of the confusion which now seems to exist respecting it."

Having grown these varieties for many years, and described them in my Grape Culture, I have naturally been led by the above communication to refer to my account of them. The Royal Muscadine is there fully described, and I can add nothing at this time. Under the head of White Nice, this grape is mentioned as having bunches like the Royal Muscadine. The Xeres, a grape introduced as a new one about ten years since, as the sherry-wine grape of Spain, has proved to be the same as the White Nice. I have never been able fully to satisfy myself that there was really any permanent difference between the White Nice and the Royal Muscadine ; yet the form of the bunch is often quite different, the berry of the Royal Muscadine larger than the Nice, the Royal Muscadine having its bunch shouldered on both sides and very thick, while the Nice has only one shoulder, *usually*, and sets its berries thinly, occasionally forming a bunch so closely resembling the Muscadine as to continue the doubt. The berries in both are round and white, turning to amber when over ripe, and usually rather larger in the Muscadine. Flavor the same as in all the Chasselas, that is, Sweet Water. I think the White Nice to be the grape grown in Canada as Canadian Chief. The Early White Muscadine is like Chasselas, rather smaller berry, and ripens a few days earlier.

The Black St. Peters is a very fine grape. You probably over-cropped the vine. Before discarding it, allow the vine to mature a very small crop, say five or six bunches, and train it on the spur system.

The Chasselas Mosque can be grown without cracking. This season, in the forcing-house, a vine produced a good crop without the loss of a dozen grapes. When the fruit begins to ripen, allow the laterals to grow, and all the young wood shoots ; this uses up the surplus sap, which, if they were pruned, would cause an over-supply to the grape, and cause it to crack.



BOTANY OF THE U. S. EXPLORING EXPEDITIONS.

THERE are four official reports on the *Botany of the United States Expeditions* for the purpose of surveying a railroad route from the Mississippi River to the Pacific Ocean, prepared by order of the American Government, by Drs. Torrey and Asa Gray. The four form a thin 4to volume with 35 excellent plates engraved on stone by Mr. Sprague. These publications do honor alike to science and art, and are worthy rivals of the best of the works of a similar nature published under the direction of European governments. From among the new or rare plants observed in these expeditions we notice several, the introduction of which to our gardens would be highly desirable.

The first expedition under Lieut. Beckwith, who, taking with him Mr. James Snyder as collector, proceeded from the Great Salt Lake in Utah, directly west to the Sacramento valley, in California, seems to have passed through a country yielding little novelty; new species of *Viola*, *Astragalus*, *Oenothera*, *Phlox*, *Phacelia*, *Pentstemon*, *Calochortus*, and *Brodiaea*, none of much mark, forming the principal acquisitions. The second expedition, under Capt. Gunnison, accompanied by Mr. Creutzfeldt, was better rewarded; this took a course from Fort Leavenworth, by way of the Kansas and Arkansas rivers into the great basin of Utah, and thence to the neighborhood of Lake Sevier or Nicollet. Several new species were found; among old ones the most important were *Abies taxifolia*, a handsome tree growing from 35 to 40 feet high and 12 to 16 feet in diameter, and an undetermined *Pinus* without cones, apparently between *flexilis* and *Strobus* on the highest places in the Cochetopa; the leaves grow in fives, and were smeared with a clear, colorless balsam. The third expedition under Captain Pope was not more successful; although its route was 6° or 7° more to the southward, near the 32d parallel of latitude. Little horticultural occurred on this line except *Pentstemon Fendleri*, a species with blue or purple flowers, near *P. acuminatus*. The last expedition under Lieutenant Whipple, accompanied by Dr. J. M. Bigelow, passed over very fine collecting ground, especially through western New Mexico between 35° and 36° north latitude to the great Colorado River, passing by the valley of Williams' River, commonly called Bill Williams' Fork, one of the tributaries of the great stream. This district is spoken of as a country very rich and peculiar in its flora. A number of new genera and above 60 new species rewarded the exertions of the exploring party. Among the more important acquisitions were the following:— 1 *Fremontia Californica*; this rare and beautiful shrub, was found 15 feet high in the Cajou pass of the Sierra Nevada. 2 *Spiraea Millefolium*, a low shrub with the leaves of a Milfoil. 3 *Pentstemon spectabilis*, from the San Francisco mountains in New Mexico and elsewhere, with a crowded panicle of purplish blue flowers, often 2 feet in length. 4 *Quercus erinacea*, a fine Oak with bristly cups and large Chestnut-like leaves, growing 25 to 30 feet high on the Californian mountains. 5 *Taxus brevifolia*; this, the north-western Yew, Dr. Torrey considers distinct from that of Europe. 6 *Washingtonia gigantea*, which Dr. Torrey, following Decaisne, regards as a species of *Sequoia*. 7 *Pinus Engelmanni* (a name proposed instead of that of *P. brachyptera*), said to be a very fine species, with leaves sometimes nearly 6 inches in length, common on mountain ranges between the Pecos and Rio Grande quite to the Sierra Nevada; it is called Yellow Pine and Pitch Pine

in some places. 8 *Pinus flexilis*; this is said to resemble greatly *P. Cembra*; its ordinary height is from 40 to 50 feet, but Dr. Bigelow saw trunks more than 100 feet high. The seeds are eatable. 9 *Juniperus tetragona*? the smooth barked Juniper, of Bill Williams' Mountain, and on hills west of the Colorado, seems to be distinct from the Mexican plant of the same name, having much larger fruit. Dr. Torrey calls it a variety named *osteosperma*. 10 *J. pachyphloea*, from the Zuni Mountains, in West Mexico, the thick barked Juniper of Sitgreaves, has sweet berries, like the last, which are said to be used by the Indians as food.



HOW TO LAY OUT A GARDEN: *Intended as a General Guide* in choosing, forming, or improving an estate, from a quarter of an acre to a hundred acres in extent. By EDWARD KEMP, *Landscape Gardener*. Second edition. London, 1858.

AMERICANS have only within a few years turned their attention to landscape gardening; our country was too well supplied with trees, lakes, mountains, and valleys; the pursuit of the *real* was too rife, after the Revolution, to allow space for the imaginative. The forest was to be cut down, and is still, in many places, to be extirpated with fire and steel; but growing wealth, travel, study, pictures, and the natural love of beauty, have fairly induced a desire for adorning home; we begin to know how much comfortable and elegant domestic arrangements are calculated to enhance our pleasures. The spirit once abroad, the realization soon followed; we have arrived at a stage which is so far satisfactory that we have examples of what may be done artistically, in laying out and improving. We can see what it is to give us Nature around us; what she is capable of being when reduced to a smaller compass than in her native

glen and waterfall. Those who do this, and do it with simplicity, with truth, with grandeur or taste, are lords of Nature, and their art is a master-art. Even inanimate and dumb things speak a language to man. His trees expand their leaves in the air, glad of the rain, proud of the sun, awake to the winds of heaven; the clear breeze playing with the branches of the shadowing trees, "the valleys low, where the mild zephyrs use," the distant, uninterrupted prospects, speak in sweet accordance to the heart with nature for its guide. We may say that he

"Who of these delights can judge and knows
To interpose them oft, is not unwise."

A good guide is an essential ingredient in making preparations for perfect imitations of Nature. "Our" native Downing, with an eye and a mind that were at once recognized for their beauty and correctness, led us on with consummate art, giving an impetus that cannot be stopped; with every successful turn in Fortune's wheel, the lovers of the country, that natural love imparted to us at the Creation, spring up over our land; home becomes a cheerful, a happy place. It may be that misfortune dispossesses some, but the idea has taken a permanent shape; the desire is no longer with *all* classes to be more wealthy; many desire to be better, to know more, and with enlarged views to enjoy more of intellectual life, and to eschew the too busy haunts of men and their turmoils. The country now contains many who take a philosophical view of life and its duties; who enjoy truthfully, and whose almost sole remaining anxiety is, that their successors may be so trained as to be likewise contented with moderation in the enjoyment of *enough*. Those who have watched the progress of events, the individual cases of citizens with a sufficiency, and compared their careers with those who have sought happiness abroad, can have come but to one conclusion—that *home* is the place for Americans. We could name a wealthy community where it has been so much the custom, *the fashion*, to go abroad that their neighbors are distasteful; excitement has taken the place of rational life, and the insidious enemy of peace has attacked the heads of families, so that this country is "not good enough for them." What may we not anticipate for their children? There is a growing spirit of absenteeism, which if not checked, will do much injury and retard the onward career of our country. The educations received abroad do not make the best patriots.

We can point to no occupation or pursuit so likely to retain our wealthy families at home, so alluring as life in the country when it is properly understood and carried out.

How to lay out, adorn, and occupy a house and grounds in the country, so that it shall continue to attract its occupants to remain, becomes then a question of great importance; it is, therefore, natural that we should welcome every valuable contribution to this end, and give our space to the examination of such books as promise to aid the aspirant after the country, with its health-giving occupations, and its ever new mental pursuits. We therefore notice Mr. Kemp's volume, and in advance of its republication in America shall point out some of its contents as worthy of study: taking the liberty, at the same time, to repeat a caution, that it is not *everybody* that is qualified by previous training to enter upon country life. There are many who like the occupation of building, and forming a home in rural

scenes, who are entirely unfitted to occupy their formations when complete. They must have some love for solitude, some fondness for reading and study, or they must enjoy *work*; without a *pursuit*, the country is uninhabitable. Mr. Kemp is the well-known landscape gardener who laid out Birkenhead park, near Liverpool, and his book has already received so much notice as to make any further introduction unnecessary. While we write, we are in the receipt of an American reprint of this work, from the press of Messrs. Halsted, of 351 Broadway, to whom we owe much obligation for the illustrations politely furnished us for use in this article. Their edition is a fac-simile of the English, and is sold by them, and also sold or mailed, *postage paid*, at the office of the *Horticulturist*, 25 Park Row, for Two Dollars.

At the same time that we strongly commend this book, we must add that without caution the young planter may be led astray if he adopts the lists of trees and shrubs in the work without reference to climate. At the North, many that are commended would not be hardy. The publishers, in a second American edition, which we have no doubt will be called for, should have this matter and some others well looked after by an American editor.

Under the head of "Belts of Plantation," our author says:

"Narrow strips or lines of plantation are among the most tasteless forms which belts can assume, and are equally mean and undignified wherever else they may occur, they can so readily be seen through, and will frequently present, at the lower parts, a mere assemblage of bare stems. Their effect is most meagre. They want breadth and massiveness. Hence, when plantations are necessarily so straightened, they should be composed mainly of such low-growing shrubs and dwarf-trees, especially evergreens, as will, by being planted tolerably close, and furnished down to the ground, produce a thicket-like character, that shall conceal or disguise their actual dimensions.

"In the subjoined sketches, Fig. 1 shows a narrow belt of trees, similar in size and character, such as is frequently seen around the margins of



FIG. 1.

small parks, where, if undergrowth of any kind has ever been planted, it has become killed by the density and shade of larger trees. Fig. 2 will



FIG. 2.

serve as a hint of the way in which such a belt may be broken up, and its form still more diversified by the use of a few intermediate bushes, such as Thorns and Hollies.

"The same defect, rendered, probably, a little more manifest from the superior beauty and variety of the ground line, will be apparent in Fig. 3,

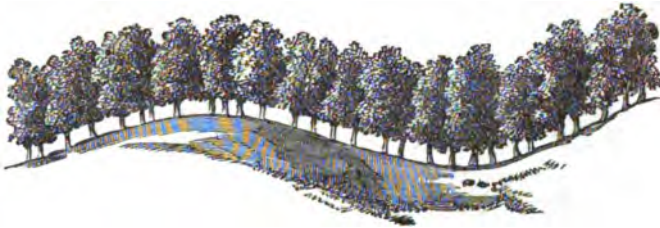


FIG. 3.

which exhibits a belt traversing an undulating surface. And the mode of remedying the evil is partially indicated in Fig. 4, where the trees are



FIG. 4.

thrown into masses on the slopes and summits of the swells in the ground ; the hollow being left unclothed for the purpose of marking the full extent of its depression."

The observations on these topics are judicious throughout. Under the head of "Appearance of Extent," a subject as yet but little studied among us, by which a small space is enlarged in appearance, we copy the following :—

"Breadth of lawn must be fully attained before any notion of extent can be conveyed. A garden will always look meagre without a good open lawn. * * To make an open glade of lawn appear still larger than it is, the expedient of turfing closely around the plants and masses along its margin may be had recourse to. An object of one color, and that a green one, acquires a striking apparent augmentation of size. And if the plants that flank an open lawn are principally evergreens, and their branches sweep the grass, without any soil being visible, the space is thereby very much expanded in appearance. All walks should, as far as is practicable, be concealed from the house. * *

"There are certain features to be met with in some landscapes, which, though not in themselves inelegant, or deficient in beauty or interest, may have their character and effect very much improved by the way in which they are made visible from a place. Such are church towers and spires,



FIG. 5.

(Fig. 5), pillars and obelisks, distant and pretty cottages, prospect and flag towers, ruins, lighthouses, windmills, and many other common-place erections, which may yet, from their position, their outline, or their historical

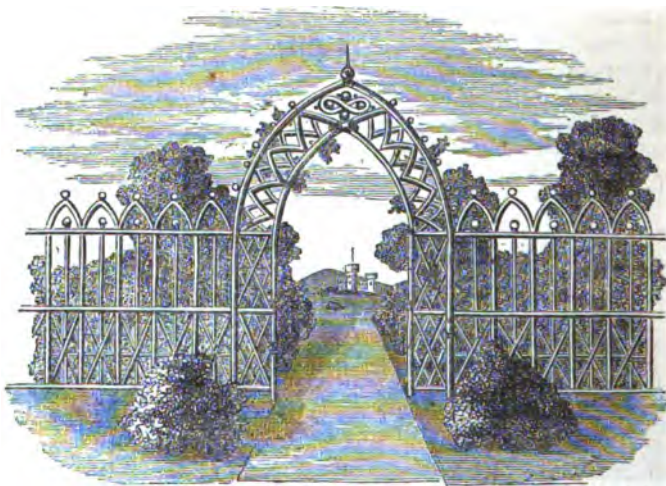
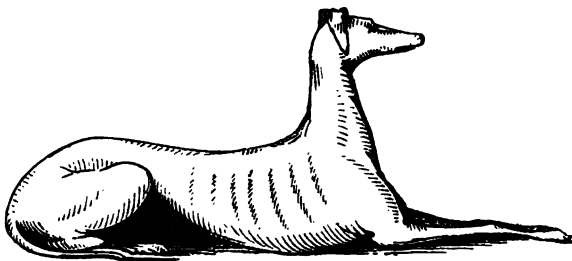


FIG. 6.

or local associations, be worth directing attention to particularly. The most characteristic and effective plan of introducing such to view, is by small openings in the interior or boundary plantations, which shall create a kind of *vista*, at the end of which the object intended to be seen occurs. If the sides of such vistas are tastefully and naturally finished off, without any appearance of formality or indication of art, and the trees in the outer landscape at all favor the design, very beautiful effects may be produced in this manner, out of the most ordinary materials. Or the framework of such openings may have a more artificial character (Fig. 6), the branches of trees or light wooden fences being made into a Roman or Gothic arch. Or the same may be formed out of old stems of trees or wire trellises, clothed with climbers. Rude or more polished arches might also be made of stone or plastered brick, or any similar substance. Either of these might form an artistic framework to a small scene, of which one object is the principal feature."

Space failing us in our cramped domain, we must defer some further extracts and illustrations for another number.

THE retarding of bush fruit is a point too little noticed or attended to, and this chiefly through the pressure of other matters at the period proper to attend to them. Gooseberries, Red and White Currants, Raspberries, &c., look exceedingly ornamental when trained on trellises, providing they can at all times be kept in trim. If, however, they cannot be properly attended to, such had better be omitted. On perpendicular rails, too, they are very easily protected, or shaded, when requisite; and this is a consideration as to both earliness and lateness, as well as to birds. Trellises of strained wire are cheaply knocked up, and may be admirably adapted to their habits. Further, with regard to pruning in the rest-season, a too sparing hand is the common fault. Gooseberries, especially, require more thinning than is commonly awarded them. The interior shoots of the bush, in healthy trees, should be almost entirely pruned away, and the bearing confined chiefly to the extreme points. They are thus gathered with more ease: indeed, the bushes may be stripped in half the time of those choked up in the interior. The fruit, also, is much finer, and the crop will be found to tell amazingly in bulk. As for the Red and White Currants, their side spray—if other points of management be right—may be all pruned close to within half an inch of the main stem. There is, thus, less summer spray to prune back, and the fruit is, in consequence, much larger. Those who grow for exhibition purposes may use liquid manure occasionally, during the swelling process, as also just before the fruit begins to color. This will much increase the size and general appearance.



EDITORS TABLE

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the *HORTICULTURIST*, *Germantown, (Philadelphia,) Pa.* Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

THE ANNUAL FAIRS are now over, and we may fairly assume that an amount of information has been disseminated, a knowledge of real things acquired, which will tell favorably on the future. These useful fairs take the place in this country occupied by the celebration of Saints' days and holy-days abroad, where there is little actually learned and much time lost. The farmers' sons and daughters here go on very different kinds of expeditions for their amusement from those of any other country; they go to learn, to acquire something useful, and to prepare themselves to be help-mates to their families; how eminently they are so, let those travellers say who have seen the women of the old countries and those of the United States; the one reading about everything, and knowing everything; the other scarcely aware that there is any country or any novelty beyond the ken of her own vision.

These fairs, more conspicuously than any other event in our midst, are the surest signs of our progress as a people; the enormous attendance of all classes, young and old, and their decorous conduct there, their intelligent countenances, their comfortable appearance, dress, deportment, their inquiries and suggestions, are truly a marvel when we contrast it with the ignorance and imbecility of the continental laborer, and his uneducated family. It will no longer do to call the farmer a clown; he has been to the best practical school, and is fully prepared to appreciate every improvement in mechanics, in machinery, in ploughing, or in domestic economy; he soon finds out which is best among the sewing, as well as the harvesting machines; he has, too, an eye to the ornamental, and is just ready to decide on the best form of the piano for his daughters. The Fine Arts' tent is one of the most frequented spots of even the farthest western fair, and here are laid the precious seeds of an appreciation of the true forms of beauty, to be employed in judging the best books, the best furniture and the best fabrics. *Progress* is the word everywhere, and the American advances with comet speed. Long may the Annual Fairs form a feature of American life, as contrasted with other European gala-days. We ask no Pope to bless our horses and mules; we feed them and set them to work. No painted and bedizened saint or madonna is paraded to avert a drought—we underdrain and stir the ground; the silks of the wax statues abroad we place upon our daughters; we dig and delve not as slaves to old opinions and routine, but as intelligent learners; our youth come from school full of hope, each one aiming to make his mark; and what do we see everywhere, but industry leading, intelligence teaching, mind predominating, and thousands upon thousands preparing or prepared to give laws to the old world, to beat them at mowing, ploughing, sailing, and even at chess! Where, but at the Annual Fair is all this spirit of advance so forcibly exhibited?

PEARS ON OLD STOCKS.—After all our discussions, we have seen some instances of successful pear crops the past two seasons that were highly satisfactory. They grew on grafts, on old trees whose fruit was no longer worth picking. Old healthy trees are thus a valuable possession. We see this fact confirmed by a writer in the *Country Gentleman* thus:

Other old trees are standing about the fences, which were in full bearing at least fifty years ago. The fruit of these latter trees is wild and inferior, and I am now transforming them by engrafting the leading branches with some of the finer kinds. Budding the succulent shoots, which are sure to appear where the grafting fails, succeeds, and completes the process. In this way some of our large trees which have been bearing worthless fruit for twenty or thirty years, are now covered with fine specimens of the Seckel, &c. Old, rough and unpromising as these stocks may seem, we have as yet found no instance which has not been attended with a reasonable degree of success. No old pear tree is cut down on my premises; it is considered too valuable to lose. A faithful attention to pruning, engrafting and budding, will, in the course of from three to five years, give more fruit than can be obtained from a young stock of twenty years' growth.—R. M. CONKLIN, *Cold Spring Harbor, L. I.*

CYTISUS NUBIGENUS.—One of the most agreeable works that has found its way to our table, from London of late, is C. Piazza Smyth's "Teneriffe, an Astronomer's Experiment; or Specialities of a Residence above the Clouds." It is illustrated with Photo Stereoscopic views, the first book of the kind. Mr. Smyth and his suite passed some months near the summit of the peak of Teneriffe in astronomical observations, and has made a popular narrative of the expedition, in which he was accompanied by his wife. He appears to have been an enthusiastic naturalist as well as astronomer. We can find room only for the following extracts:

"We were travelling now over rough ground of volcanic rubbish, loose cinders, and one would think in such constant motion that no plants could retain a footing. Nor can any one of them do so except the *Cytisus Nubigenus*, and that rejoices in the site and flourishes. How wonderful the adaptations of nature to the necessities of different regions. For here, where the ceaseless motion of the sliding particles composing a hillside, destroys every other living thing; where the aridity of the soil during many months is only surpassed by the aridity of the air, which is dryer than that of Sahara, nature has produced a plant, that on the mere remembrance of winter rain, long since evaporated, can furnish no contemptible supply of wood; and with its richly stored, white flowers, arranged in close rows along its smaller branches, affords illimitable honey-making materials to all the bees of the country. The inhabitants of the lower strata fasten their bee-hives on mules, and pasture their bees here every summer. . . .

"The great Dragon Tree, *Dracaena Draco*, to which most sober naturalists attribute the age of 6000 years, proudly raises its antique arms above every thing around, with its enormous root like branches, and is now well cared for by a Spanish nobleman who has purchased the place where it grows."

DIGNITY OF LABOR.—A busy man, says Fraser's Magazine, finds a relish in simple recreations; while a man who has nothing to do, finds all things wearisome, and thinks that life is used up; you cannot excite his interest by any amusement which is not highly spiced with the cayenne of vice. It was a glass of water the wicked old Frenchwoman was drinking when she said, "Oh, that this were a sin to give it a relish." Give me the man, I say, who can turn his hand to all things, and who is not ashamed to confess that he can do so. Who can preach a sermon, nail up a paling, prune a fruit tree, make a water wheel for his little boy, write an article for Fraser, or a leader for the Times, or the Spectator.

COVERINGS, MATS, &c.—It may be well to remember in the approaching cold weather, that whatever covering is used, whether straw mats, bast mats, cloth, or wood, they should be elevated above the surface to be covered, so as to contain as much confined air as possible. Confined air is one of the worst conductors of heat; the covering will not radiate, or give out heat, till the confined air and covering are both heated above the state of the atmosphere; and the

transmission of heat will take place more slowly through the confined air than anything else : thus, for very little trouble, by elevating our coverings, we surround our plants or plant-structures with a substance which is very retentive of heat, and increases the power of the covering in an immense degree. The heat has most tendency to ascend upwards, and this should be most guarded against; but it will also escape by the sides, and to confine the air and heat completely, the plant or plant-structure must be covered all round from the external air.

THE YAM.—The fitness of the plant for garden purposes, says the *London Gardener's Chronicle*, is now incontestable; and we are glad to be able to add that means now exist of attempting to improve its qualities, by rendering it more hardy, or more productive. We are informed by M. Duchartre, in a paper recently read before the Horticultural Society of Paris, that among some Yams sent by M. de Montigny from China to the Imperial nursery of Algeria, a female made its appearance. All the others had proved males. Ripe seeds were produced by the female; other females were raised in Paris from the Algerine seeds; and they too have seeded, so that we now possess the usual means of operating experimentally upon the Chinese stranger. It appears certain that this Yam is one of the plants that, like the Potato and the Turnip, are prone to alter their habits under the influence of domestication. We therefore trust, that our skillful breeders will immediately take it in hand. They cannot undertake a task more likely to abound in great results.

SEWING MACHINES.—The change which has come over the world in regard to machinery to abridge labor, is one of the evidences of a better educated community than once existed among us. It is not many years since certain people always asked if a newspaper was printed on machine-paper, and if it was they rejected it as an imposition, because it deprived laborers of work. All this is discarded as antiquated imposture, and we have now the sewing machine in most well regulated families. Wheeler & Wilson's, which we see advertised in our fly sheets, has a large popularity, and we are assured by those who work with it that it is all that can be desired. We hope it is used where the *Horticulturist* is taken, for then the ladies will have more time to read about the garden than if they were always stitch, stitching! Wheeler and Wilson's machines work *rapidly*, and with *little fatigue* to the worker.

AUTUMN STRAWBERRY.—Mr. P. Raabe has exhibited a very fine Fall-bearing strawberry, called the *Delice d'Automne*, which fruits very finely till frost, and in the green-house, in pots, till December. It has been noticed by Dr. Lindley in the "*Gardener's Chronicle*," very favorably. It is a hybrid, between Perpetual Rouge and British Queen; the fruit about as large as that of Burr's New Pine, the external appearance more like Early Scarlet, with a flavor of British Queen, but more vinous, and highly delicious. The berries produced in autumn are still better than those in spring. Taken altogether it would prove a favorite from its fine size, exquisite flavor, hardness, and great productiveness, even if it did not bear in the fall.

With Mr. Raabe it bore abundantly last spring with very little attention, and the same plants in pots were again in bearing Sept. 15th, and will continue so probably till December; it makes runners rather freely. To have a good crop in fall, the runners should not be permitted on the plant. The flavor is perfectly delicious. We are indebted to Mr. Raabe for plants, and to his able foreman, Mr. Pantlen, an enthusiastic and progressive gardener, for other favors of interest to our readers.

MR. EDITOR:—A lately published periodical contains a very sensible article about Pear, culture, from the able pen of our friend, Dr. Ward. He takes a fair ground, and seems to look, as we all do, to further experiments and results for a conclusion.

I am not going to stand up in vindication of the recently so much abused Pear. It is all the same to me if many choose to be partial, and to scorn one of our best fruits. It will not prevent me from pursuing my course, and delighting in luscious fruit. But, in justice, can Dr. Ward charge to the Pear the slight expense of hoeing, when a stalk of corn, some few carrots, beets,

potatoes, &c., require just as much hoeing? and how different the result! A Pear-tree of good size has not many weeds growing under its shade, and those which *can* grow there are easily removed; the rest is the work of the plow or cultivator.

Speaking of Mr. Hovey, he seems to suggest that this gentleman spends a great deal for that operation. I wish Mr. H. would let us know how many Pear-trees, of about ten to fifteen feet high and pyramidal in their form, one man can clean in a day? I doubt if it would amount to one cent in a season, for twice hoeing, per tree.

What care do we not bestow on a flower, blossoming only once in a year, and requiring constant mulching, cleaning and watering for all the balance of the time? Where trees, as certainly Mr. Hovey's do, yield from half a bushel to a barrel per tree, of fine, saleable fruit, can we, in justice, pretend that such a profitable plant should not require any of the common expense so readily and repeatedly granted to corn-stalks, cabbages (worth two cents apiece), and other inferior vegetable products?

I will say no more, and I only write these few lines to give fair play to the Pear in the pending controversy.

LEO.

DEMOCRAT AND SCHMAN PEARS.—Mr. J. J. Younker has forwarded specimens of the Democrat and Schman pears, the former medium size, and a very excellent August variety worthy of cultivation; the Schman not equal to others of the same season already cultivated. The Democrat originated on the farm of a neighbor of Mr. Y., in Bucks County, Pennsylvania.

NEW APRICOT.—Among the examples of orchard-house growth that have been sent us, one of the prettiest was a little specimen in an 8-inch pot of a grafted seedling from the Pitmaston Orange Nectarine, raised four years ago. In color, size, and flavor, it is superior to its parent, from which it also differs in the leaves being more shining, and their glands reniform not globose. The tree is said to be more hardy; and is remarkable for fertility, very small plants from nine inches to a foot high having each borne from four to six capital nectarines. We understand that it has been sold by Mr. Rivers under the name of Rivers' Orange.—*Gardener's Chronicle*.



The influence of stock upon the scion is an interesting topic. I know of an instance where three grafts of the Dix pear—notorious, you know, for coming late into bearing—were inserted, on the same day, some ten years ago, into three different stocks. On two of them the grafts have been increasing in growth slowly, year by year, without producing fruit or fruit bud. On the other the graft commenced bearing the *first year after insertion*, and has annually increased in productiveness; (until this year, when, as it happens, there is not a pear on it). My impression is that they were all double-worked. I am certain that the last-mentioned—the productive one—was; and perhaps you would like to know the name of the pear whose stock imparted such early fruitfulness to the tardy Dix. *So should I*.

By the way, the owner—a veteran pomologist—considers the Dix as the prince of all pears. My own experience is quite similar. Two scions, taken from a small tree of the Pinneo pear, purchased of Messrs. Hovey & Co., in 1854, were set in the top limbs of my old English

Jargobelle, and both fruited in 1855, and also in 1857; (no fruit this year, although the bloom was good;) while the tree itself, planted in my garden, in 1854, has not yet even blossomed, although it has made a healthy and handsome growth.

D. S. DEWEY.

EDITOR OF HORTICULTURIST:—I send you some grapes to show you, and inform, through you, our friends Tompkins of New York and Campbell of Ohio, that I have an aim above Fox grapes. Not one variety of these I send you has been grown for show; but have had somewhat a natural course; this being one of my plans to see what may be expected of them when under high and systematic training.

If your correspondents above alluded to, think I know nothing of trenching, &c., they ought to see my border of three hundred feet long, ten feet wide, two and a-half to three feet deep, properly prepared; with eighty varieties on it, some but two years old next spring, which have new canes twenty feet long.

And I can also show a Union Village with three shoots twenty, twenty-five, and thirty feet long, and one and a-third in diameter at the ground, all grown this season, in soil wherein neither spade, plough, pick, nor any other implement of agriculture ever entered within thirty feet of where it stands, except the little hole made when the vine was planted a few years ago, and grafted with Union Village in the spring of 1857. Can your correspondents account for this? I can, and may tell them many more things if they will condescend to write to me on the subject. Your opinion of the grapes will be a pleasure to me.

S. M.

Calmdale, Pa.

[The grapes received are Louisa, earlier and better than Isabella, Delaware Burgundy, a fine wine grape; Concord, the best we have ever seen and very good; Cassady, excellent; Garroques, not as good as desirable; White, Sweet Water, not ripe; Clara, excellent; Diana, quite up to its reputation; Catawba, ditto; and Sage, good for nothing, and only sent for a curiosity and to create a smell, we suppose; Union Village, most agreeable and "good;" To Kalon, good; Herbeumont's Madeira, very highly flavored; Pitunaston, or White Cluster, not ripe; Canadian Chief, native or not, most excellent; Secord's Sweet Water, not so good as the last; Ontario, very large, but inferior to Union Village; Christie's Improved Isabella: improved in size enormously, but we cannot say better than Isabella, from this sample.—ED.]

EVERGREENS.—Mr. Barron, the gardener at Elvaston Castle, protects the leading shoots of the most rare and valuable kinds of evergreens which are liable to sustain injury from frosts, by suspending a green bell-glass over the leading shoot in autumn, till the plants are well established. This prevents moisture from settling on the top, and maintains a more equal temperature round that part. Mr. Barron puts on the glass thus early, because he is of opinion that much of the injury is done in autumn, for he frequently finds, by cutting transversely through the incipient bud, that it is brown, and sometimes quite dead; hence, these glasses are suspended before the severe autumn frosts occur. No stronger proof of the value of this precautionary measure could be adduced than that trees so protected at Elvaston are never injured, while others left to take their chance are stunted, miserable-looking bushes. If we want good cedars of Lebanon, for instance, in America, this plan should be tried; after the tree is well grown, the necessity ceases, as we have remarked at several places the past season; but we would not confine the experiment, which would not be costly, to any one species of evergreen.

TRITONIA (KNIPHOFIA) UVARIA.—Being somewhat acquainted with bulbous roots, many inquiries have been made of me respecting the "new Kniphofia Uvaria, shown 1858, for the first time," etc., and seeing no more minute description of that plant in your valuable *Horticulturist*, I thought it proper to tell its history, as far as I know it.

I am sorry to say, that instead of being new, it is one of our oldest plants we know about, as already Theophrast (born 371 years before Christ) gives a glorious description of it under the name *Iris Uvaria*. It is quite natural that such an old plant should change its name

often, as the science of botany progresses; we therefore find it called by Theophrastus, *Iris Uvaria*; Linné, as *Alettris Uvaria*, or *Aloe Uvaria*; Wildenow, as *Veltheimia Uvaria*; Curtis, Gawber, Aiton, and Redouté, as *Tritoma Uvaria*; Roth, as *Veltheimia speciosa*; Lamarck, as *Aloe longifolia*; Link, Romer and Shultes, as *Thritomanthe Uvaria*; Mench dedicated it to his friend Kniphoff as *Kniphofia aloecides*, while Hooker changed *aloecides* into the more significant name *Uvaria*, which name it bears now in the catalogues. When the Dutch had possession of Cape Hope, they brought some plants home from there; it came to England in 1707, but was not much distributed.

There are seven more varieties known, some of which are even finer than *Uvaria*, but are not quite as hardy, as they did not stand the winter in 1855. *K. Uvaria* was killed in the hard winter of 1856.

But even if they were very tender, they would repay the little extra attention, as few plants make such a magnificent display, and have such an ornamental appearance, particularly when well established, it is then not rare to have the same plant in flower for four months. It has the most effect when planted in masses.

P. RAABE.

Philadelphia.

A NEW AND MOST VALUABLE FLOWERING SHRUB.—The *Indigofera dosua*, from the descriptions received from abroad, promises to be one of those universal favorites which few plants attain. It was received but lately in England from the South of France, and is thus described by a correspondent:

"I have often remarked a disparity in the rate of progress, towards the goal of popular favor, between a *new* hardy flowering shrub and a *new* florists' flower. True it is, and a little reflection is sufficient to explain the anomaly. Our Roses, Pelargoniums, and such plants are of a fashionable throng; and the moment a new member is obtained, the graceful neophyte is paraded forth with gay, floating banners, amid the flourishing of trumpets and the noise of fame. The new flowering shrub, though possessed of the same intrinsic excellence, is less favorably circumstanced. Naturally slow in its development, belonging to no gay coterie, it does not come thus prominently before the public. It moves slowly and silently into the pathway of fame, depending on time and its own merits for patronage and position.

"I have been led to these remarks through having recently met with a beautiful new hardy shrub at the Cheshunt Nurseries. It grows naturally in Upper Nepal, at Suemba, where it is called *Dosi-sua* by the natives, and hence it was named by Professor Don, *dosua*.

"The plant is growing in the natural soil of the Cheshunt Nurseries, which is a moderately light garden loam. That it is hardy cannot be doubted, for it has withstood the two last winters, wholly unprotected, out of doors. The plant is now about four feet high, and six yards in circumference, composed of numerous long pointed shoots, resembling a dwarf Willow in general outline. More than a thousand elegant spikes of purple pea-shaped blossoms, averaging three inches in length, adorn the bush at the present time; and, judging from those still unexpanded, there would seem a line of succession long enough to continue the blooming period from this time till November. The stems continue growing during summer, and from the axil of every new-born leaf springs a spike of flowers. The leaves are composed of small oval leaflets, ranged along a tapering mid-rib, oppositely and in pairs, from eight to ten pairs of leaflets forming a leaf about three inches long.

"The Rose has long been considered the queen of flowers, and this might with equal justice be installed as the queen of shrubs. Although new, the plant is comparatively cheap, and every lover of a garden should hasten to possess it."

AT KEW.—*Nymphæa gigantea* from Moreton Bay is also in bloom. The leaves of this new species are small compared with the size of the flowers, which it is reported should measure one foot in diameter. The blooms hitherto produced at Kew, however, do not measure above half that size. They are blue, with yellow centres, and rise on strong footstalks at least one foot above

the surface of the water. In order to have this Lily in perfection, it is thought it will require to be planted in deep water. A fine specimen of the Madagascar Lattice plant (*Ouvirandra fenestralis*) is also growing in this house. Its leaves are quite one foot in length and four inches in width. It has flowered and ripened seeds from which young plants have been raised.

FRUIT.—That the average season for fruit has been a poor one in most sections of the union, all admit; but if report is to be believed, there have been some instances of remarkable success. In regard to peaches, the prices have been unusually high, very few cultivators having any for sale; yet we hear that the Messrs. Reybold, of Delaware, have sent fifty thousand dollars' worth to the markets of Baltimore, Philadelphia, and New York, keeping a large steamboat of their own for the conveyance. These peaches were raised on an island, newly planted, in the Chesapeake Bay, their old orchard in Delaware having failed. Another party is reported to have made ten thousand dollars the past season by peaches alone. We can believe this if we judge by the prices obtained, for we saw fine specimens sold at rates varying from four to eight dollars the bushel. Plums, too, made their appearance in considerable abundance from the Delaware Peninsula, where their enemy does not seem yet to have penetrated, but where a railroad having been made, no doubt he will soon be *en route*. Apples are very scarce everywhere, poor ones commanding from three to five dollars the barrel. The best pears have been retailed at twenty-five cents each. Those few who have had crops may congratulate themselves on the prices obtained from

That bounteous feast which Earth, the general mother,
Pours from her fairest bosom, when she smiles
In the embrace of Autumn.

THE PLOUGHING MACHINE mentioned last month was taken to the Illinois State Fair, where, we hear it has done everything that was hoped for it.

SORGUM SACCHARATUM.—What has become of it? and where is the profit on the sugar and molasses. Echo—where?

THE POTATO DISEASE is represented as having made considerable inroads on the prospects of the Irish and English crop, and what is very singular, something extremely like it has attacked the scarlet Geraniums.

WE-BEE-TUCK APPLE.—An early apple under this name reached us by the kindness of Myron B. Benton, of Leedsville, Dutchess County, New York. It is a natural fruit on the farm of W. N. Benton, and from the only tree in existence, and is named after the beautiful Indian stream near which it stands. We cannot say that it has merits to warrant its coming in competition with others that ripen at the same time, early September.

MILLER SEEDLING, from James O. Miller, Montgomery, Orange Co., New York, which has received a prize at the State Fair of New York, deserves the attention it has received. It commences to ripen in September, and gradually ripens for two months. We find it excellent.

BUCKLEYA DISTICHOPHYLLA.—We were much pleased to receive a specimen of this new genus of American Shrubs. The plant seems to have been known for some time to botanists, but so imperfectly as not to have been properly placed until comparatively recently. It was named by Dr. Torrey in compliment to Mr. S. B. Buckley, and described by Dr. Gray, in 1847; and writing of the plant in 1854, Dr. Gray says it proved perfectly hardy in the Cambridge Massachusetts Botanical Garden. The flowers are small and very insignificant, but the foliage is very pretty, reminding one at first sight of *Frazinus Centiscifolia*.

CATALOGUES, &c., RECEIVED.—Abridged Catalogue of Fruit and Ornamental Trees, Shrubs Plants, &c., cultivated and for sale by J. Huggins, Woodburn, Illinois. Excellent.

The Oregon Farmer, published at Portland, Oregon, is a very spirited and well-printed sheet

neatly illustrated, and giving strong evidence that the editor knows what he is about. W. B. Taylor & Co. are the publishers.

Supplement to the Descriptive Catalogue of André Leroy's Nurseries, Angers, France. Agent, F. A. Brugiére, 138 Pearl Street, New York.

Catalogue of Fruit Trees of the West Feliciana Nurseries. Dr. James H. Grain, Agent, Cain, Illinois.

Catalogue of 1858 and 1859, Fruit and Ornamental Trees, Vines, &c. By Isaac Pullen, Hightstown, N. J. A valuable catalogue of a valuable collection.

Supplementary Catalogue 1858 and 1859. Wm. R. Prince & Co., Flushing, N. Y.

Catalogue 1858 and 1859, of Gloaming Nursery, Clarkesville, Ga. By John Van Buren.

J. M. Thorburn & Co's., Catalogue of Bulbous Flowering Roots, 15 John Street, N. Y.

Cheltenham Nurseries, Haines & Walker, near Germantown, Pa., Fruit and ornamental Trees.

Catalogue of Grape Vines, Vinwood Grape Nurseries, Ilion, Herk. County, N. Y. J. D. Ingersoll, Proprietor. Embraces all the Grapes of value.

Grape Vines, Fruit Trees, &c. E. Miles, Sag Harbor, Long Island.

ERRATUM.—The Boston, or Pinneo Pear, was last week by an inadvertency called also the Hebron—they are distinct fruits; also, on page 483, "Harvey" is misprinted for Hovey.

ANSWERS TO CORRESPONDENTS.

J. B. * * * * writes the publisher of this work that he has concluded his mind can do without it, as it contained so much last year about Cuba, and he declares himself to be "only interested in apples." Well, we are not pleased to part company with any; but if he has joy in the adieu, he may compare himself to the resigned Mussulman, of whom Mr. Layard made some statistical inquiries. His reply contained these charming confessions: "As to what one person loads on his mules, and the other stows away in the bottom of his ship, that is no business of mine. Listen, O, my son! There is no wisdom equal to the belief in God! He created the world, and shall we liken ourselves unto Him; in seeking to penetrate into the mysteries of His creation? Shall we say, 'Behold, this star spinneth round that star, and this other star with a tail goeth and cometh in so many years?' Let it go! He from whose hand it came will guide and direct it. * * * I praise God that I seek not that which I require not. Thou art learned in the things I care not for, and for that which thou hast seen, I defile it. Will much knowledge create thee a double belly? or wilt thou seek Paradise with thine eyes?"

Some time since, a person wrote the Philadelphia publisher that the *Horticulturist* contained *too much information!* Verily, it is difficult to fathom the wishes of some people. We have to proceed as if all our readers were in search of knowledge, make the work *as good as we can*, and leave it to the appreciation of those sufficiently informed to desire to know more.

CALIFORNIA SEEDS.—(J. B. Rumford.) Many thanks for your attention. We believe your plants are undescribed, at any rate have been unable so far to ascertain their names. A few seeds of the Wappatoo, formerly sent have grown; but we failed with the Camas. We hope for better success with these.

Apricots usually bear fruit well on the Peach stock, but they are not considered so durable as when worked on Plum, or their own roots. Your trees are probably growing very vigorously, and may be induced to bear earlier, either by root-pruning, or severe summer pruning. If they can be struck easily with you by cuttings, as your letter seems to indicate, they would no doubt bear much earlier, especially if the cuttings are taken from bearing trees.

GRAPES.—A SUBSCRIBER.—Your number one is the Cape; number two is the Concord, over-ripe, but the best of the lot, and best we have ever seen; number three is Hyde's Eliza, a seedling of the Isabella, and much like it in most respects.

GOSSIP.

WE should take a lesson from the Grape mildew in behalf of Gooseberries. As the disease, in its first stage, like the Grape mildew, is an *Oidium*, there is every reason to believe that the same treatment will have similar results; and as sulphur (at least sublimed sulphur), properly applied, is a sure remedy in the one case, we have no doubt about its efficacy in the other. They have, in Great Britain, an allied Fungus which attacks Gooseberries. It seldom, however, does any material injury, and never assumes the dense, matted form of the *Sphaerotheca*.

IN learning, as we have done, How Plants Grow, and Why they Grow, have we not learned more of the lesson of the text placed at the beginning of this book, and of the verses that follow? "Wherefore, if God so clothe the grass of the field, shall He not much more clothe you? Therefore, take no thought, saying, What shall we eat? or, What shall we drink? or, Wherewithal shall we be clothed? For your Heavenly Father knoweth that ye have need of all these things." And we now perceive that causing plants to grow is the very way in which He bountifully supplies these needs, and feeds, clothes, warms and shelters the myriads of beings He has made, and especially man, whom he made to have dominion over them all.—*Dr. Gray.*

WATERING newly-planted fruit trees, or shrubs, must be done with caution, and when once done, had better not be repeated too often; rather shade the ground with some loose material, which checks evaporation; and keep the roots of everything else at arm's length. For, be it remembered, that no amount of watering will compensate a fruit tree for the robbery it has sustained by other crops exhausting the soil its roots have to procure their food from. Peas, and other crops, are very often the cause of Peach trees appearing as if they wanted water, and the pump is but a poor remedy for this state of things. In fact, let it always be borne in mind, that watering by hand is an artificial operation, and is only wanted when the suffering plant is placed in artificial condition; and, even then, let it be treated as nearly as possible as nature would treat it. Do not give deluges of cold water, daily, to plants not requiring it; better, certainly, would it be to let it alone entirely.

As an example of the manner in which the subject of Orchard-houses is treated by Mr. Rivers, and by way of calling attention to a subject on which much of the success or failure of Orchard-house culture depends, we give the following:—"In the Orchard-house culture of Peaches and Nectarines, syringing must play an important part; for the red spider is so fond of their leaves, that, like Sinbad's Old Man of the Sea, he will stick closely, and cannot be dislodged without applying the syringe close to the under surface of the leaves. If this pest be suffered to make the least progress, the flavor of the fruit will be entirely destroyed. A small pocket lens in the hands of the amateur will be the best instrument to discern it; looking closely at the under surface of the leaves, if it be there, a small bright-red speck, like a red grain of sand, will be seen. The experienced gardener does not look for them. One glance at the upper surface of those leaves, which show some minute yellow specks, is quite enough for him. If, therefore, the least sign be apparent, continue the regular syringing, even till the fruit is ripe; otherwise, syringing may be discontinued when the Peaches and Nectarines commence to soften, preparatory to ripening."

IN the time of gathering fruits, it may be well to remember the following, from Tusser :

" Forget it not,
Fruit bruised will rot.
Light ladder, and long,
Doth the least wrong.
Go, gather with skill,
And gather that will."

HOOD thus apostrophises

OCTOBER.

" I saw old Autump, in the misty morn,
Stand shadowless, like Silence, listening
To Silence, for no lonely bird would sing
Into his hollow ear, from woods forlorn,
Nor lowly hedge, nor solitary thorn :—
Shaking his languid locks, all dewy bright
With tangled gossamer, that fell by night,
Pearling his coronet of golden corn."

FORMATION OF CLOUDS.—The visitor to mountain districts must often have observed the formation of clouds on the sides of the elevated portions, which take their flight to the upper regions and there become the floating drapery which is so much admired. Shelley in his *Prometheus* has finely apostrophised them thus :—

" And multitudes of dense, white, fleecy clouds were wandering in thick flocks along the mountains, *shepherded by the slow unwilling wind.*"

EDUCATION.—The following is from the pen of the editor of the *Ohio Cultivator*, Sept. 1, 1858 :

But we are a deadly foe to sham and pretense, and never go with the multitude just because it is popular to be in the current. From our position we have often seen men who lay claim to some great things, stand on the corners and cry—lo here ! or lo there ! and modestly ask the world to stop till they have developed their great idea. Well when they came to get the great idea out, it was like a pollywog—all head and shoulders—tapering off to a very insignificant tail, which finally drops off, and the whole thing hops away with a bloomk ! I tell you we can't afford to stop our eager battalions to look after tadpole theories. If these men have anything to say worth hearing, let them out with it ! and not be putting on mysterious airs and fishing for a big *douceur*, like certain dark-lantern *Professors*, to pave the way with gold before they disclose a disclosure. If that is the game, I can only say—"Get out of the way, old Dan Tucker." This kind of learning and science that never discovers its philosopher's stone, until some thrifty farmer has turned it out with his plow, is entirely too slow and dull for this age.

MISCELLANEA.

MATE TEA, &C.—Measures are about being taken, through the Naval Expedition to Paraguay to introduce into the United States the *Maté*, or Paraguay tea ; also a valuable medicinal plant, called *Nard*, believed to be a sure specific against the bites of venomous insects or reptiles ; and a peculiar kind of honey bee, which builds on the branches of trees, instead of in hives or trunks of trees, as with the common bee.

A FREQUENT AMERICAN PHENOMENON.—"Ladies or gentlemen who hitch teams with a rising man, whether in the way of matrimony, travel or business, should take care lest he be not too rising altogether, and they find themselves eventually lifted so high that their feet are no

use to them whatever. Last spring our friend Quodline planted some lima beans, and not being provided with poles, he married and settled them in life by planting in each hill sunflowers, trimming up the stalk, so that it served the purpose of a pole. For a time all went on well, till at length the sunflowers growing so much faster than the beans, the latter were *absolutely drawn up by the roots*. As we said before, John Deans emigrating into families who regard them as small potatoes, and very ambitious females of limited education, who have their eye on 'society' and a first chop spouse, will please take notice."—*Home Journal*.

CHEMICAL FARMING.—Mr. Bird, farmer, at Burton, near Bamburgh, England, has just sustained a heavy loss in a singular manner. He had a flock of 867 sheep, which were recently "dipped" in a chemical solution used for destroying ticks, and then turned out to grass. It is supposed that this solution was washed off the sheep by a shower of rain and that the grass on which it fell being eaten by the sheep poisoned them, as in six days only 26 out of the flock of 867 remained alive.

DR. THEODOR KOTSCHY has announced for publication, under the name of "Die Eichen Europa's und des Orient's," a history of all the oaks found wild in Europe and the Levant. It is to appear in 10 numbers, published every two months, each containing 10 sheets of letterpress and five plates, with the text in Latin, German, French, and English. It is well known to botanists that Dr. Kotschy has made the European Oaks his especial study, as well as those of Asia Minor, whence he has distributed many supposed new species, some of which are remarkably unlike our own. The publisher is Holzel of Olmutz.

ORCHARD HOUSES.—We should like to show the incredulous a box of fruit now before us from an ORCHARD HOUSE CULTIVATOR of some years' standing—excellently flavored, well colored Peaches and Nectarines, among the former of which is one specimen 9½ inches in circumference. The clamor that has been raised on the part of a few wrongheaded persons who have fine old trees on fine old walls against cultivation in Orchard Houses by those who have neither fine old trees nor fine old walls, has so nearly died out that we should hardly have returned to the subject had not the fruit before us shown more conclusively than ever what may be done by practical skill operating upon very rude materials.—*Gardener's Chronicle*.

WE have just received the 9th part of Weddell's excellent *Chloris Andina*, reaching as far as plate 57, with some omissions. The letterpress breaks off in the midst of Loganiaceæ. It is to be hoped that the removal of the learned and hard-working author to the Pyrenees for some years will not interrupt the regular appearance of this very valuable scientific work.

IN Regent's Park, London, there was formerly a green-house window filled with a fine collection of Cacti and similar plants. The window, or windows, for I believe there were two so formed, were pushed out, supported by three strong stone brackets, and extended a little on each side. Shelves were put up on each side, and on them plants were placed, consisting chiefly of the most beautiful Cacti of the *Echinocactus*, *Mammillaria*, and *Melocactus* subgenera. Some of the *Epiphyllums* were grown in ornamental baskets, and suspended from the roof. A more interesting sight I seldom saw. The plants grew finely, and flowered well, and were the admiration of every beholder, much more so than the usual occupants of a town window.

AMONG *birds of prey*, the male provides the food for the young, but the female feeds them. A sportsman in Scotland, shot the female of a pair of falcons. For a time he heard continual cries from the young ones, and the male was indefatigable in bringing food. After two days all was quiet. He clambered up the rock, and found the young all dead—starved to death—but absolutely walled in with food of every description that the male bird had brought.

AMONG new philosophical instruments we report, a *Garden Thermometer*, mounted on a porcelain scale, which is unaffected by the weather, and which may be said to be everlasting. The figures and divisions are not painted on the surface, but eaten into the substance of the scale by

the action of fluoric acid, rendering them perfectly indelible—an object much to be desired by gardeners, who have to use these instruments in stoves and forcing-houses, where the humidity acts on them with injurious effects. The scale being of pure white porcelain, and the figures and divisions black, the reading is at all times clear and distinct.

INTERESTING DISCOVERY.—At the last meeting of the Linnæan Society, Dr. Joseph Hooker read an extract from a letter, mentioning the discovery, near the banks of the river Amazon, of large *Equisetums*, the plant which abounds fossilized in coal formations. These plants were twenty feet high, and the stem was the thickness of a man's wrist. The writer of the letter stated that his surprise on the discovery of these plants, which were believed to have been extinct, could scarcely have been exceeded had he seen the saurians of former worlds revived, and rushing through the swamp.

MICROSCOPIC VIVARIUM.—A narrow glass shade, similar to those used to cover ormolu clocks, is cemented upside down on a wooden stand. Against this the microscope is placed, the thinness of the glass allowing the use of a half-inch object lens.

With this apparatus, a good instrument introduces us to a world of wonders. But those who possess no microscope, need not despair of amusement. There is a field for life-long research and interesting study in that which can be seen by the unassisted, but observing eye. And should the owner possess the glass of faith, he has a still better prospect in view, for "Eye hath not seen, nor ear heard, neither hath it entered into the heart of man to conceive, the things which God hath prepared for them that love Him."

Notes for the Month.

VINEYARD CALENDAR FOR NOVEMBER.

BY R. BUCHANAN, CINCINNATI, OHIO.

AFTER the gathering of the crop, and the fall of the leaf, the vineyard is unattractive in appearance. It has been stripped of its poetry, and presents a mere field of naked vines and dry stakes. But little work is required this month, unless hoeing or ploughing is thought necessary to be done now, in preference to spring. This is a mooted point as yet, the majority of cultivators preferring spring.

Pruning the vines may be done in the latter part of this month, if the cuttings are wanted for planting, or for sale. Some persons oppose this practice, but I have pursued it for years past, without injury to the vines. Cuttings may be planted out in nurseries this month, or even in vineyards, with safety, although the spring is generally preferred.

THE WINE.—The casks of new wine may be filled up, and the bungs driven tight, if, as is usual, the fermentation has by this time entirely ceased, and the wine is even tolerably clear.

ERRATA.—"Straining" the grapes, as printed in the calendar for October, should read "stemming."

NOTE.—The grape crop this year, in the Ohio and Missouri valleys—on all "limestone formations"—has, like the apple crop, proved almost an entire failure; and from the same cause, "mildew and rot;" not one-fifth of an average yield has been gathered. A very few exceptions are found in particular localities, where tolerably good crops have been produced; and on "sandstone formations," but little injury was sustained, and the yield is fair.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

MILDEW.—Fruit cultivators are gradually becoming aware that mildew in some one of its various developments, is the most prevalent and insidious enemy with which they have to contend. Exotic grapes are so subject to it, that their culture in open air has been abandoned, and even in glazed houses considerable attention is required to prevent its attacks. The native

grapes are not exempt, and in some seasons the foliage is so extensively injured as to materially reduce the value of the crop. The gooseberry also suffers, and even the hawthorn, lilac, tulip trees, and other ornamental plants show the extensive range of the parasitic affection. There is a growing conviction that the cracking of the pear is the result also of a species of mildew, and it may be found that applications of sulphur-water will be a surer prevention of this disease, than those special manures which have been recommended, and which have not been found to remedy the evil, or give indications of a curative process.

The peculiar atmospherical conditions tending to the increase of mildew, are not particularly well understood. I have frequently repeated my conviction that the peculiar mildew seen on the foreign grape under glass, on the gooseberry, lilac, &c., is induced by atmospherical aridity. This mildew develops in the form of a mouldiness on the upper surface of the foliage, and frequently extends and envelops young growing shoots, in which case the bark seems to contract and crack into lengthened openings. Here can be traced a close resemblance to the cracking of the pear, going far to prove that it has the same origin. In sheltered city yards, where drying winds are arrested in their sweeping progress, and where a quiet and more humid atmosphere prevails, the foreign grape will frequently attain to a fair perfection. So also the White Doyenné pear is annually produced in its greatest perfection on trees similarly located, while in open exposures a few miles distant, a fair specimen cannot be procured. No reason that has ever been brought forward on the probable cause of pear-cracking is so philosophical, or so much in accordance with recorded facts, as that which connects it with mildew. The mildew seen on the native grape, is apparently a different fungus from the above. Here the "under" side of the leaf is attacked, destroying the vitality of the tissue, which is then tender, and is speedily scorched by sun, and the leaves decay and wither. When this occurs during the ripening of the crop, the sudden loss of foliage prevents it from maturing, and hence many bunches will show one-half of the fruit black and the other green. This apparent scorching is most noticeable during the months of August and September, when heavy night dews are succeeded by hot sun, or after a few dull or rainy days.

The whole subject is one demanding the general attention of cultivators; and in connection with practical observation, we would recommend the careful perusal of the valuable reports on this and kindred subjects, made from time to time during the last ten years, by the Rev. C. E. Goodrich, Utica, N. Y.

MULCHING.—Trees that have been mulched during the season, should now have all loose material carefully removed from their roots. Downing somewhere remarks, that mulching is the most beneficial practice ever introduced into our horticulture, and all who have seen the benefits derived from its proper application, will readily endorse the statement. But it is very desirable to have the soil about the roots of trees well pulverized and clean, previous to winter, otherwise in many localities, much injury will be done by mice, who find a comfortable cover for their depredations under such loose material. These animals are never troublesome in clean cultivated soil.

GREENHOUSE.—The plants will now be arranged for winter, and discrimination must be given in their treatment. The structure should be well aired during mild and quiet weather, using no fire heat until absolutely necessary. Many of the plants are now in a state of rest. *Camellias*, *Azaleas*, *Daphnes*, *Epacris*, and many other spring-flowering plants that have now completed their growth, and are well provided with flower buds, should not receive any excitement. A cool, airy situation should be chosen for them in the house, and only watered enough to prevent injury from drying of the roots. By arranging the above principally at the end of the house farthest from the source of heat, and opening the ventilators chiefly at that point, they will be under the best conditions, and the opposite end of the house being kept warmer, will be a congenial position for the young *Calceolarias*, *Geraniums*, *Cinerarias*, &c.; and here also, should be placed such as are now, or shortly will be, in flower, as *Chinese Primrose*, *Linum Trigynum*, *Lechenaultia Formosa*, *Coronilla Glaucæ*, *Oxalis*, *Epiphyllums*, *Habrothamnus*, *Cestrum*, *Begonias*, *Cupheas*, *Heliotropes*, *Salvias*, &c. With such a list there need be no want of floral ornament:

"Unconscious of a less propitious clime,
There blooms exotic beauty, warm and snug,
While the winds whistle, and the snows descend."

Bulbous roots of *Hyacinths*, *Narcissus*, *Crocus*, &c., for pot culture, should be planted at once; let the pots be well drained, and use light, rich soil. The pots should then be set in a sheltered corner, and covered about a foot over with sand, coal ashes, or soil, covering with boards to throw off heavy rains. Here they may remain for a few weeks to form roots, which they will speedily do, and will flower more perfectly when taken into the house. This method provides a growth of roots previous to exciting the tops, and although it would have been better to have potted a month earlier, there is still ample time to provide for a full display of flowers in the green-house, during February and March.



EQUINETELY.

Litho by Geo. Hayward, New York

1. The first of these is the fact that the

2. second of these is the fact that the

3. third of these is the fact that the

4. fourth of these is the fact that the

5. fifth of these is the fact that the

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11. eleventh of these is the fact that the

12. twelfth of these is the fact that the

13. thirteenth of these is the fact that the

14. fourteenth of these is the fact that the

15. fifteenth of these is the fact that the

16. sixteenth of these is the fact that the

17. seventeenth of these is the fact that the

18. eighteenth of these is the fact that the

19. nineteenth of these is the fact that the

20. twentieth of these is the fact that the

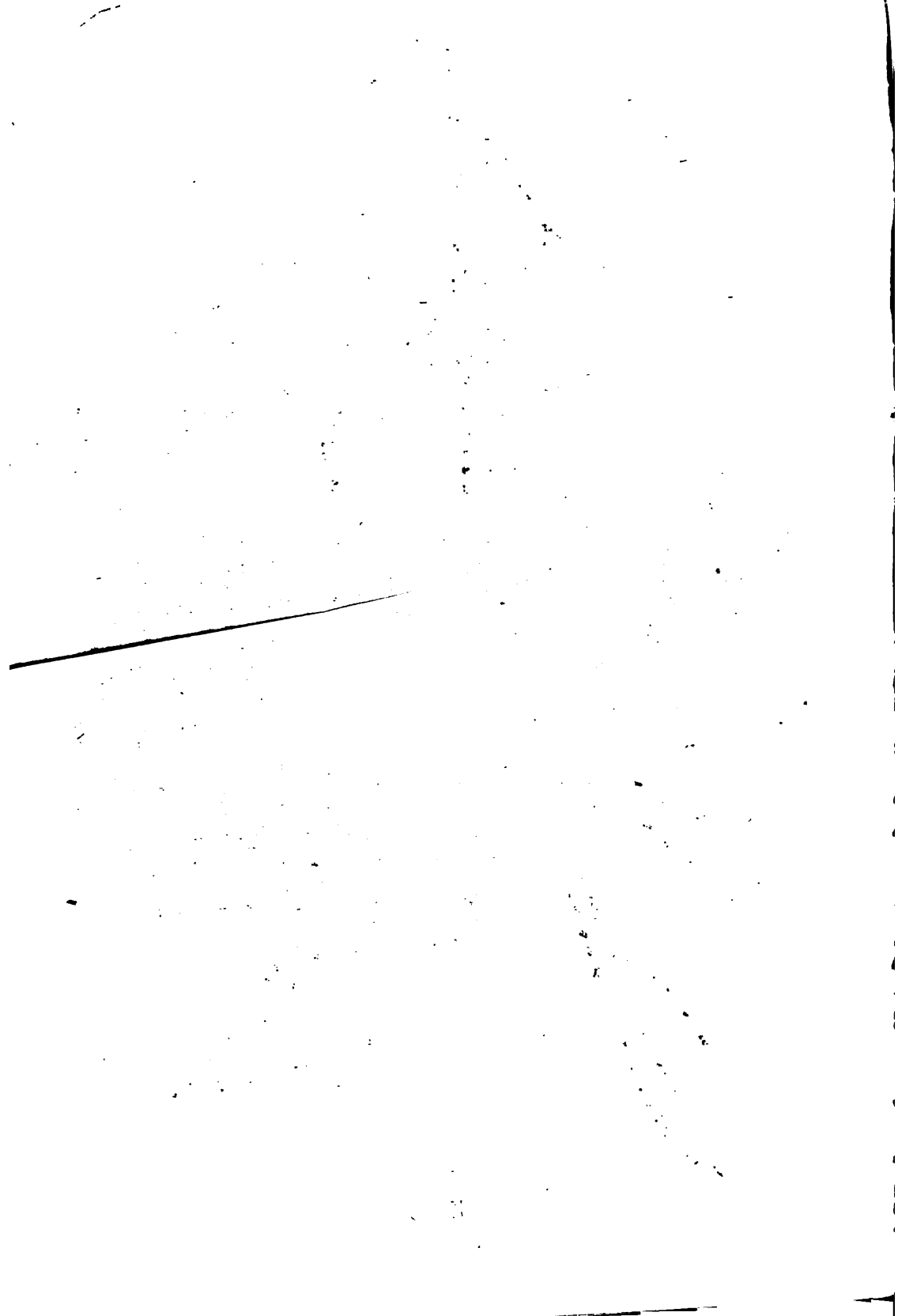
21. twenty-first of these is the fact that the

22. twenty-second of these is the fact that the

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25. twenty-fifth of these is the fact that the



Chat.—Country Life. Man in Cold and in Tropical Countries.

SCENE.—THE EDITOR IN HIS CHAIR. A NEIGHBOR DRAWS ANOTHER, LIGHTS HIS CIGAR, AND DISCOURSES.



EIGHBOR.—You have lately made some remarks on the disadvantages of cities; if I recollect rightly you give the preference to country life. Do you sufficiently reflect that cities concentrate advantages which the country is denied? Can you not as easily mention where cities have the advantage?

Editor.—I grant you advantages; but must still hold that the natural position of man is the country. There he is a lord, a master, his own master; not the slave of banks, a slavery I hold to be only a little lighter than that in Cuba. In the country, man has an individual character; in cities he is moulded more to the common form of mind; he meets his friend with the same form of dress, and his habit of thought is influenced by conventional rules and his newspaper. I have a theory too, lately confirmed by an author of merit, that the care of animals has a very civilizing effect; you in cities never even look after your horses; they are consigned to the groom. I might easily pursue the subject, but I have just now to ask your own opinion on the social progress we are making; our cities have received a severe lesson—they have been stabbed in vital points, but such is the tendency to merchandising that probably they will recover from their immediate depression. Surely, the experience of the last year is quite unsatisfactory. But there is a great element of country life which is sometimes overlooked, *climate*.

Neighbor.—A learned author lays it down as a law that of all the great social improvements, the accumulation of wealth must be the first, because without it there can be neither taste nor leisure or that acquisition of knowledge on which the progress of civilization depends. It is evident that among an entirely ignorant people, the rapidity with which wealth is created, will be solely regulated by the physical peculiarities of their country. At a later period, and when the wealth has been capitalized, other causes come into play; but until this occurs, the progress can only depend on two circumstances: first on the energy and regularity with which labor is conducted, and secondly on the returns made to that labor by the bounty of nature. And these two causes are themselves the result of physical antecedents. The returns made to labor are governed by the fertility of the soil, which is itself regulated partly by the admixture of its chemical components, partly by the extent to which, from rivers or from other natural causes, the soil is irrigated, and partly by the heat and humidity of the atmosphere.

Editor.—Then you allow no wealth to originate from the manufactories of a country.

Neighbor.—I am afraid not a dollar. We may save our money by not exporting it for foreign labor, but evidently there is no increase of wealth if you give me a piece of cotton cloth for the plough of my manufacture.

You get my plough and I get your cloth. The exportation of the cotton cloth and getting money for your labor is another thing, in a national point of view. But let us pursue our topic.

The energy and regularity with which labor is conducted, is much dependent on the influence of climate. This will display itself in two different ways. The first is, that if the heat is intense, men will be indisposed, and in some degree unfitted, for that active industry which in a milder climate they might willingly have exerted.

Editor.—Ah! yes. I remember Mr. Squier telling us of the white man he saw in Central America. He found him in a miserable tent rudely made of palm leaves, swinging in a hammock, a bundle of cigars on one side of him and a bunch of bananas on the other, both within reach. "Why don't you plant your ground and raise something for sale," said Mr. Squier. "What is the use," said the sluggard, "when these are sufficient for my wants." But proceed.

Neighbor.—Another consideration is equally important; climate influences labor not only by enervating the laborer or by invigorating him, but also by the effect it produces on the *regularity of his habits*. Thus we find that no people living in a very northern latitude have ever possessed that steady and unflinching industry for which the inhabitants of temperate regions are remarkable. The reason of this becomes clear when we remember that in the more northern countries the severity of the weather, and, at some seasons, the deficiency of light, render it impossible for the people to continue their usual out-door employments. The result is that the working classes being compelled to cease from their ordinary employments, are rendered more prone to desultory habits; the chain of their industry is, as it were, broken, and they lose that impetus which long cultivated and uninterrupted practice never fail to give, and which every one should be careful to preserve.

Editor.—Most true; here is one of the evils of the stoppage of factories during our late panic. The number of people who have lost their regular industrial habits and have become loungers and drinkers, &c., it would be impossible to estimate.

Neighbor.—So powerful is this principle that we may see its operation even under the most opposite circumstances. It would be difficult to conceive a greater difference in government, laws, religion, and manners, than that which distinguishes Sweden and Norway on the one hand, from Spain and Portugal on the other. But these four countries have one great point in common. In all of them continued agricultural industry is impracticable. In the two southern countries, labor is interrupted by the heat, by the dryness of the weather, and by the consequent state of the soil. In the two northern countries, the same effect is produced by the severity of the winter and the shortness of the days. The consequence is that these four nations, though so different in other respects, are all remarkable for a certain instability and fickleness of character; presenting a striking contrast to the more regular and settled habits which are established in countries whose climate subjects the working-classes to fewer interruptions, and induces a habit of more constant and unremitting employment.

Editor.—The topic you open up is one of great interest, and when we meet again you must extend it. I shall ask you, sometime, whether you think that in what we call the innate and original morals of mankind, there is the advance which so much school teaching, so many books, and so many

sermons, would have led us to expect. Is man much *wiser* for the railroad and the telegraph? Are we educating the people to industry or idleness? Is "living by one's wits" more a trade than it used to be? and to conclude with a question more germane to the *Horticulturist*, where are we to procure gardeners when emigration ceases, unless we establish schools for teaching them in youth?

Neighbor.—Very true; we must have experimental gardens, lectures, teaching, and diplomas of qualification issued to those who go through a regular course of drill and study. Gentlemen must bestir themselves.

MANURE FOR FRUIT TREES—WHERE TO FEED FRUIT TREES.

BY WILLIAM BACON, RICHMOND, MASSACHUSETTS.

THE great secret in cultivating all plants successfully, lies in furnishing them with food best adapted to their growth and healthfulness. Whenever a tree or plant is found naturally growing and attains a perfection of growth, there, we may suppose nature furnishes the necessary elements. A plant taken from such a locality and transplanted to another of similar character we may suppose will succeed well, but if the soil is moister or drier or is composed of different elements, the character of the tree must become somewhat changed to meet its new circumstances. If the character of the tree is changed by these circumstances, its duration will, it is likely be changed also, and, very likely the quality of its fruit will be affected by like causes.

It is an object, then for all cultivators, especially those of fruit trees, fully to understand the character of the soils in which they are most at home, and whatever artificial means are used to produce growth and fruitfulness, should tend to giving them a similar soil.

Our experience in this matter has been somewhat varied. We have tried well-rotted barnyard manure, placed in heaps around the trees in autumn and spread and forked into the soil in spring with very good success. In a solitary instance, we placed half rotten horse manure around a pear tree in autumn, and forked it in, in April. This, as reason fully teaches, came near being a fatal experiment. The tree did not exhibit a single leaf until the July following, and then was saved only by careful treatment, heading in, washing the remaining parts with strong soap suds, and pouring the same material around the roots until the feverish heat produced by the decaying manure around them was subdued. In two weeks from the commencement of this treatment we had our tree in healthful leaf, and had fully learned never again to apply heating manures to fruit trees. Old leaves, we have also tried, and find them valuable as mulching when that is necessary; but placed in the soil they are worthless, nay dangerous, until pretty thoroughly decomposed.

The very best material we have tried, and we can bring proof of its goodness from the experience of others, is a compost of which swamp muck is the body or principal material. Its vegetable matter, in almost every stage of decomposition, its tendency when mixed with the soil to retain just enough and none too much moisture, to keep light and porous itself and keep the soil so, in which it is incorporated, adapt it not only to become an

acceptable food for trees, but to keep the earth in a condition for the expansion of the roots. It may be successfully used alone, after the exposure of a few months to the atmosphere, but is essentially improved by adding a couple of bushels of lime or a half dozen bushels of ashes to the cord, or by letting it lie where it will take the wash of the barnyard, or the soap suds from the house. }

Here, then, we can do away the objections of those who claim they cannot afford to manure their fruit trees, from the supposition that by doing so they shall rob their other crops, and thereby have a few bushels less of corn or a few hundreds less of hay. They need do no such thing as rob their yards or stables for the purpose. *Nature* has provided a better material for the object, one that is now throwing out nausea to engender disease, all over the land, but which kindly offers to kindle a new and deeper glow on the face of the apple, and expand the ruddy cheeks of the pear to more healthful dimensions. All she asks for it, is, to have it taken out of her way, for doing which, she promises to create a new supply in the same repository from the leaves that rush there to escape from the driving winds, and the loose material brought from the hills by the noisy rivulet that stops in the sluggish pool to rest awhile in its ocean course. What a beautiful combination! Atoms from crumbling rocks, soil from the woodlands and hillsides, and the cast off drapery of the forest so far decayed, that its identity is lost. Just the thing to make a new soil of an old one and cause earth to smile again at the beauty of her plants and trees, and glorious, health-giving fruits.

WHERE TO FEED FRUIT TREES.—The stones of the field and trees of the forest are teachers, and what is more beautiful, they teach the truth. We planted a white oak, some years since, not in honor of any warrior or political race horse on the track for election, but to add one more variety to our pretty well duplicated grounds. After it had stood a year or two we noticed in midsummer a circle around it, some five feet from the trunk, and some six inches wide, where the grass had died out. The next year, this circle was removed from its outer rim, still further from the tree, and of an increased width, and so it has continued to travel for several years. The fact gave rise to many wonders as to the cause among observers, but the inference we drew from the fact was that the white oak was a great eater, that the mass of feeders lay under the circles where the grass was killed, and pushed away from the tree in proportion as the circle enlarged.

The native chestnut, planted out gave the same illustration. In this case of both trees, the inner circle became sodden with grass as new circles were forming beyond, and the increased width of circle from year to year showed us that the feeders were increasing to meet additional demands of the tree.

To us, it was a lesson without labor or cost. It taught us that the practice so universally adopted of manuring fruit trees for a little distance, just around the body of the tree, could never meet their demands for food. A few feeders may remain, to be sure scattered along the roots which are yearly increasing in size, but the body of them are yearly pushing away in search of a greater amount of food. Fully to subserve the purpose then for which manure is applied to fruit trees, the mass of it must annually be placed further from the trunk of the tree for keeping up with the circle of feeders to gratify their demands.

The observation teaches another fact. A preparation of ground to receive a tree, for a few feet square does not fully answer their demands. It may do well to give them a start, but when they get to the end of this starting point, disease and dwarfishness will follow. The man who plants an orchard of any kind of fruit, must give *all* the soil an ample preparation, or his success cannot be complete.

The root, is the most important part of a tree. If they can spread and extend themselves, the trunk and branches will follow of course, and in due time the fruit will appear.

Again, the power of a tree to resist winds depends much upon the strength and circuit of its roots. If they are fine and far spreading, but little danger will arise from stormy gales. I am often pleased to see the *Horticulturist* going to the root of the matter.

PEARS ON THE QUINCE STOCK.

BY E. NORTON, FARMINGTON, CONN.

THE late unanimous approval of dwarf pears by the American Pomological Society, impels me to add my testimony to that of Messrs. Allen, Elliott, and others, in the late numbers of the *Horticulturist*, and protest against such indiscriminate approval.

Seven years ago, I planted four hundred trees on well prepared ground, most of which was a sandy loam, with one or two gravelly ridges. Holes were dug two and a half feet deep by three or four wide, and filled with a carefully prepared compost, not too rich, but having all the ingredients prescribed by the experts. The course of treatment until lately was as follows. The whole ground was cultivated with various crops, and stirred up yearly, and the trees were dug about and specially manured. Some of the feebler ones were mulched. All were thoroughly trimmed and scraped, and washed yearly; and watched at times daily, by myself and a skillful gardener.

At the end of the first year about one hundred were dead, which I replaced with a hundred fine trees from Mr. Wilder, of Boston. We ascribed the death of some of these to shallow planting, and did not err in that respect again. The next year about fifty more died, and to make a long story short, they have gone off regularly at about that rate ever since. Not without remonstrance on our part and vigorous opposition; but the blight took many, and the cold winter many, and inherent obstinacy many. They *would* die. Those on the gravelly ridge first of all. For some years I filled the vacant places with the same kind of trees, but have given that up and now replace with standard trees. About 120 dwarfs remain, of which sixty are doomed to die before next spring. Perhaps there are forty vigorous trees. Several of this kind, well branched below, blew over last spring and had to be propped. Among the remainder are some which have no vitality, but only life. They have changed little since they were planted. They have been tended so long that one hates to pull them up, although knowing they will never come to anything.

As to fruit, an average of two bushels per year will cover the whole crop. The Vicar of Winkfield and Louise Bonne de Jersey, have done the best out of about twenty kinds.

From fifteen trees, standing in the garden during the same time, I have had perhaps an average of four pears each per year. Unfortunately most of the fruit was from two trees, Suzette de Bavay, and Excellentissima, which keep well, but never ripen. A single standard Bartlett tree, about ten inches in diameter at the base, which I began to graft five years ago, has for the past three years borne as much fruit as the whole dwarf pear orchard.

I have taken some pains to inquire of people in various places which I have lately visited, as to their success with dwarfs, and will briefly give the results. In Albany, New York, Dr. Wendell has tried dwarf trees thoroughly and "would not take them as a gift." He thinks the climate too cold and variable. He has an orchard of about 1,100 standard pear trees which are growing finely. Mr. Joel Rathbone of Renwood, has cultivated dwarfs about ten years. Has had in all, about one hundred trees under garden culture, soil a clayey loam—result, a total failure, only three or four weak trees, left no fruit worth mentioning.

Mr. G. W. Luther, has had three or four hundred trees, mostly under garden culture; has but ten or fifteen left, soil a stiff clay; many of his trees fruited well during the first year or two.

Mr. Wilson, Nurseryman, had some thousands of fine young trees (the best I have ever bought) on a stiff clay soil. They died so rapidly and gave him so much trouble, that he gave them up and does not now keep them for sale. He is on high sheltered ground, with a southern exposure.

Mr. John F. Rathbone, has had over one hundred trees during the past six or eight years. They were selected trees; average cost two dollars, about a dozen now remain, of which perhaps three are doing well. Some were on clay, and some on made soil, sheltered on every side but the north, no fruit of any consequence. In the same garden are seventeen Virgalieu and Gansels' Bergamot, standard trees, at least fifty years old, which last year bore about two hundred bushels of the finest fruit, and this year over forty bushels.

Mr. C. P. Williams, about three miles above Albany, began the orchard culture of dwarfs some six years ago. He planted four or five hundred among a nursery of other trees, soil mostly sandy, with decomposed slate in the hollows. They grew well at first, but soon began to fail, and he has latterly given them up in despair.

Mr. L. Menaud, well known as a skillful florist, has some fine young trees. I have not seen him lately, but understand that he now thinks well of dwarfs if they are planted deeply. I know that he has lost many trees during the past cold winters.

I cannot hear of any one in Albany, who has succeeded with dwarfs for a length of time. Mr. Wm. N. Strong, has done very well with one tree, during the past season. He picked about 200 fine Flemish Beauty pears, from a dwarf tree some five or six years old, which sold in New York, at from twenty-five to fifty cents each. He has but few trees.

In Pittsfield, Massachusetts, I was told a few days since, that the leading cultivators have given up the quince stock after a fair trial. They think the climate too cold.

In Springfield, the general verdict seems to be against dwarf trees, except upon a strip of land running through the centre of the town. Upon this is Mr. B. K. Bliss, florist, who thinks favorably of the dwarf pear on the whole, for garden culture. He generally takes premiums for fine fruit.

I have watched his trees for several years, and think that he must have lost at least as many as he has saved, and that the annual loss in future will be considerable.

Rev. Dr. Ide, in the same place, is considered the most successful cultivator of dwarf pears in that region. His best trees were destroyed by fire some years ago, but the young trees which he now has are very handsome. They stand five or six feet apart, are mulched with tan bark; treated with special manures in abundance, and grow well, and bear very fine fruit. Yet Dr. Ide is not enthusiastic for the quince root, except for some special kinds. He has found that with some kinds, the pear throws out roots above the point of junction with the quince, and the quince root generally dies. Hence, the question arises why not plant pear standards at once! He thinks that with the same treatment, fruit can be got nearly as soon from the pear root as the quince. His original soil was mostly sand, a little loamy.

In Hartford, Connecticut, the leading fruit cultivators, such as Messrs. Dewey, Terry, Turner, and others, are almost unanimous against the use of the dwarf pear. Mr. Stillman, is almost the only one whose success in garden culture is favorable, and his trees are yet young. Standard pears do well there, as is evidenced by the splendid show of fruit at the late State Fair. I will not swell your columns by giving the particular experience of each person.

It is evident that while the pear on the quince grows finely in Rochester, Boston, and perhaps along our whole seaboard where the air is tempered by water, that there are large tracts of country in which it has failed in the hands of skillful cultivators, and where success is the exception; where thousands of dollars have been sunk, and many years of valuable time spent in gaining this experience.

In all these places to which I have referred, standard pears do well. Like all other trees, they will produce fruit according to the treatment they receive, but, like the apple, they will grow and do something, even in the hands of an unskillful or careless cultivator.

I present these facts, Mr. Editor, with very few comments, to yourself and the readers of the *Horticulturist*, feeling that they speak for themselves. I hope to hear from other parts of the country, from persons who have cultivated the dwarf pear for eight or ten years.

One more statement, and I have done. Five years ago, I visited the extensive grounds of Mr. Rivers, at Sawbridgeworth, England, and among other things, saw the 2500 Louise Bonne de Jersey dwarf pear trees, referred to in the *Horticulturist*, Vol. 3, 1848. Very few of them were what we should call thrifty trees, and most of them looked badly. On my asking the reason, Mr. Rivers told me that they were planted too deeply, and that he was resetting them. I should like to hear from them now.

[We have been anxious to set this question right before our readers, and to do so have never declined the insertion of an article *in favor* of the quince stock; though having no interest either way, we confess that for the *whole country* we have doubted the success of the dwarf in orchard culture, and we believe this opinion is now generally endorsed. As for garden culture we recommend the pear on quince stock in moderation. Extensive examination in many States of the Union, has proved to our satisfaction, that even in this a most respectable number of careful cultivators have been

very greatly disappointed in their results. The great amount of outcry against these opinions, is the best argument in their favor. If a man were to declare publicly that Celery, or Tomatoes, could not be cultivated to a profit, people would simply smile and take little care to contradict the assertion. We have it stated this season, that pear culture is the most profitable of any other fruit growing in western New York. It is probably so; but, gentlemen, you announce prices as \$10 to \$14 per barrel; (see Thomas's Annual Register, for 1859). It might be asked, If it were easy to raise pears would they bring such prices? No man hesitates a moment in his decision whether the Atlantic Telegraph is speaking or whether it is silent; either it transmits messages or it does not; the facts are palpable, and we continue to receive all our European news by the old channels of the steamers. Apply this to any event on which it is desirable to find the facts. We do have fears, say the advocates of their culture, but they admit they are difficult of culture, and so far they have been scarce, and good ones are *very* dear. The Boston papers told us the other day that "two dozen large and fine Duchess D'Angoulême pears, weighing nearly a pound each, were sold in the market, under Fanueil Hall, Boston, on Thursday, for *six dollars a dozen*." The cable has then spoken—but it speaks only to the rich—in Boston, too, where is the seat of pear applause; for the poor, for us of the middle States, the pear cable is not, even if we had the means of paying the "SIX DOLLARS A DOZEN." Let any one calculate how much that will come to by the barrel, and this in Massachusetts, where we are assured pears are abundant. Heretofore we have had, and now have, almost none. Somebody asks us in a private letter, on which side of the "controversy" we range ourselves? We answer, *on both sides*. We *wish* pears may become abundant, that all our population may enjoy them. We *fear* to encourage any very expensive attempts at planting trees on quince stocks for the orchard, because we have yet seen so few encouraging results, and, as we intimated a year ago, *the facts must be the remaining argument*. When the finest fruit becomes as plenty and as cheap as we hoped, the fact will be patent and well ascertained; when the cable transmits messages regularly we all shall know it. At present, though we have had joyous celebrations for the one, and Presidential pamphlets on the other, we have no pears in market, except a few at prices which, however "remunerative" they may be, are not encouraging for that public in whose behalf we have something to argue.—Ed.]

PLAN FOR A ROSE-HOUSE AND CONSERVATORY.

BY WILLIAM WEBSTER, ROCHESTER, N. Y.

THE rapid progress which has been made in Horticulture within the last 15 or 20 years, has very naturally given rise to a variety of forms for glass structures. These forms, and their perfect adaptation to the various purposes for which they are required, have attracted the attention of the best Horticulturists of the country; for we find from time to time various articles (some of them very elaborate) make their appearance in the different periodicals devoted to Horticulture.

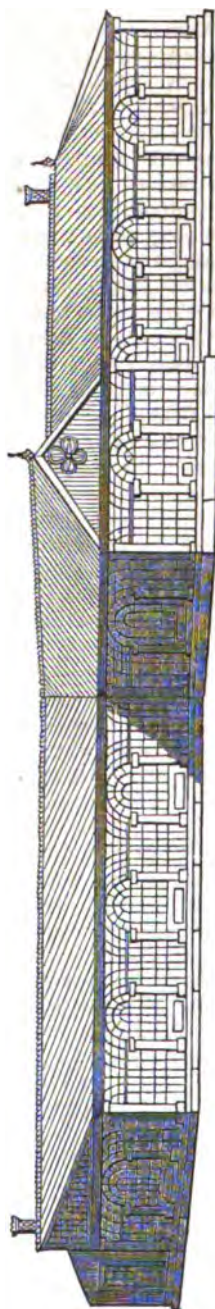
I notice in the March number of the *Horticulturist*, a very excellent one on the construction of cheap graperies, from the pen of Wm. Saunders,

of Germantown, Pa., which may be considered as all the more valuable, as he is a thorough practitioner, and understands well what he writes about. I also notice a plan in the June number, of an Orchideous house, by M. Coleman, of Westchester, N. Y. Now, in my zeal for Horticulture, I also desire to contribute my mite, in the shape of a plan for a Rose-House and Conservatory, which, if you consider at all worthy of a place in your journal, you can publish in any shape you like. The design, as you will observe, is intended to serve a twofold purpose, viz: the largest, or south division, is to be used as a winter garden; the other, as a covered way to other buildings, and will be so constructed that each division may be used separately, or form a whole, as circumstances may dictate. Perhaps it may not be considered inappropriate, before entering more minutely into the details of this plan, to give a slight description of the place for which it is intended.

Hommock Manor, the country-seat of B. M. Whitlock, Esq., is situated in West Farms Township, on the East river, or Sound, about 3 miles from Harlem. The estate contains several hundred acres; but that part on which the dwelling is situated, is, as its name implies, a complete Hommock of about 20 acres—which at high tides is nearly surrounded by water—and is approached from the main part of the estate by a causeway. The whole of the ground contained in the Hommock is devoted to ornamental or pleasure ground, which is always kept in fine order. The immense pile of stabling in this place is well worthy of remark, as it is somewhat *unique*. The stables will accommodate about 40 horses, and the carriage house about half that number of carriages. From the centre of the pile, rises a bell tower of three stories, the lower one of which is fitted up as a lecture and a school room. Those above are used as observatories; while below are the stables and carriage-houses, jutting out in numerous projections, with pointed gables and elaborate drapery. These, from their peculiarity, form quite an interesting feature. The whole throughout is fitted up with numerous gas burners. The gas for lighting this, and the dwelling house, and other buildings, is supplied from a highly architectural and ornamental gas-house, in which the gasometer is placed, which is filled from the retorts in a building adjoining.

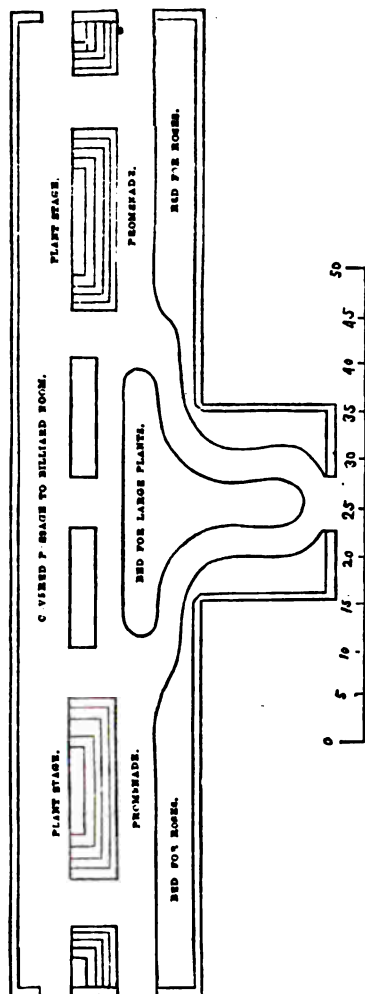
A beautiful circular, or rather curved drive skirts the base of the Hommock, on the north of which is situated the bathing-rooms, boat-house, &c.; while statuary, and seats of various kinds embellish the grounds. But the principle feature, and the one to which I desire to draw particular attention, is the immense number of large forest trees, which were removed from a great distance to their present site. Four years ago, the Hommock was nearly destitute of trees of any description; whereas now, there is a luxuriant growth of timber. To obtain this result, Mr. Whitlock, with an enterprise and liberality that does him credit, and which might well be imitated by some other would-be improvers who have the means, but not the enterprise or liberality to carry out their designs, commenced operations by removing to his grounds, from a distance of two or three miles, forest trees of large size—many of them upwards of 60 ft. in height, and 15 to 18 inches and upwards in diameter, where they are now flourishing, many of them, in all the luxuriance of their pristine splendor. They are for the most part Elms and Maples; which in one or two instances present as nice a morceau of forest scenery as any one could desire.

A small portion of the ground is devoted to the raising of small fruits and flowers. On this portion are situated the glass-houses; one of which is a



B. M. WHITLOCK'S ROSE-HOUSE AND CONSERVATORY.

DRAWN BY WILLIAM WEBSTER, GARDEN ARTIST.



GROUND PLAN.

curvilinear double-pitch, cold grapery, 20 ft. wide, and upwards of 70 ft. in length ; another is a rose-house 16 ft. wide by 60 ft. in length ; also a forcing-house, for vegetables, 80 ft. long, erected from the designs and under the superintendence of the writer. On one side of this ground, and nearer to the dwelling, is situated the group of buildings to which it is intended the house in the plan here shown shall form the connecting link between them and the dwelling. This group consists of the gardener's cottage, forcing grapery, plant-house, ten-pin alley and billiard-room, which are so constructed as to communicate with each other ; but as they are placed at a distance of nearly 150 ft. from the dwelling, it was necessary to have a communication of some sort, so that the family or visitors might traverse the intervening space at all seasons, without exposure to the weather. (Necessity, it has been said, is the mother of invention, hence the plan adopted.)

The structure, when finished, will be 103 ft. in length, by 21 ft. in width, viz : the covered way, or corridor, 7 ft. wide and 10 ft. high at the highest point of the roof ; the winter garden will be 14 ft. wide and 14 ft. high at the highest point of its roof. From this it will be seen that there will be a space of 4 ft. high, and running the whole length of the building above the covered way. Here is where the ventilators will be placed, as the roof will be a fixture without openings. The projection in the centre is 14x20 ft. The stages shown on the ground-plan are designed for specimen plants in pots. In the rose-bed, which runs along the front of the house, are to be planted pillar roses, which will be trained up the pillars and under the roof ; and the rest of the bed planted with standard and dwarf roses. The beds marked "climbing plants" are for passifloras and other plants of a similar nature, to be trained on wires to the roof, where they will hang in festoons. The part marked "large plants," in the centre, is for camelias, magnolias, &c., where they will be planted in the soil. The openings in the ground plan are to be filled with glass doors ; which will form either a means of communication or separation, as the exigences of the case may require. The whole will be heated by means of a flue and hot-water pipes concealed beneath the walks.

One great object in publishing this plan, is to show how advantageously old materials may be worked into a house of this kind ; for all the circular-headed windows, with a corresponding number of square ones, belonged to the old Brick Church in Beekman Street, which was pulled down to make room for stores ; so that the plan had to be got up to meet the material, and not, as is usually the case, the materials to suit the plan. The design is to make this a summer garden, as well as a winter garden. By covering the roof during the hot weather with canvas and removing the front sashes and opening the rear ones, a thorough circulation of air can be obtained during the hottest weather, which will eminently fit it for plants in pots.

THE PERFUME OF THE ROSE CHARACTERISTIC OF ITS PARENTAGE.

I HAVE surely chosen a sweet subject, with which every one is conversant, from the Queen to the peasant. Every one, however, may not have remarked the peculiar and distinct perfume which many Roses of separate types or families possess, and which, notwithstanding hybridization through many

generations, is not lost. It is my firm opinion that we can by this peculiarity more truly unravel the tangled net-work of hybridization, in which many of our choicest Roses are enveloped, than by external appearances alone.

Who is not familiar with the scent of the old pink China (*Rosa indica*)? it is distinct, astringent, and refreshing, but not odoriferous or sweet as the Old Cabbage or Provence. This is the grand type for scent of all the Chinas, Bourbons, and some other almost scentless Roses, which scent still clings to them as a class through innumerable crosses. Should any one doubt this fact let him take a true specimen in each class of our finest modern Roses, say, Hybrid Perpetual: Madame Vidot, or Madame Laffay; Tea: Devonensis, or Goubault; China: Archduke Charles, or Beaucarmine; and Bourbon: Souvenir de Malmaison; and, if I mistake not, his olfactory nerves will, in the dark, tell him which have the true China blood in them. The next distinct family, identical with the China in its habit and rapid growth, is the Tea Rose, the type of which, the old yellow Tea, had its birthplace in China. This class of Roses cannot be distinguished from the China but by its scent, which the French with their nicety of discrimination considered to be like green tea. It has certainly a very peculiar scent, most unlike every other Rose. This, the Tea, being blended by hybridization with musk and other Roses, brought our old delicious fruit-scented Jaune Desprez, or the Raspberry-scented Rose. This being probably fertilized by Cloth of Gold has given us, in Gloire de Dijon, the great desideratum of late years; a hardy free-blooming and magnificent climbing Tea Rose, with a true fruit scent. Few or no Roses are so odoriferous as the Teas. I have found a single bloom of Tea Goubault sufficient to perfume a large room. Their peculiar scent is to be recognized, however they may have been crossed with other Roses.

The true old Noisette still retains the delicate scent of its parent, the Musk Rose. The time is now come when the Noisette Roses of our catalogues must merge into what they really are, a family of hybrid climbing Teas. The days of the true old Bourbon, too, are numbered. This brilliant class, for want of scent, is now being largely hybridized with Teas and Perpetuals to give its flowers size and fragrance, so that novelties in Bourbons are every season becoming more rare, and in a few years they will have to be called Hybrid Teas. The Macartneys and other families have now become, for want of fragrance, quite unpopular. So much for perfume. What is a Rose without it?

I now come to the grand family of Hybrid Perpetuals, the most popular of all; and even here, although they have been united and blended in a thousand ways with all other classes of Roses in cultivation, their perfume, to one accustomed to the true scent of each class, is of the greatest assistance in obtaining a clue to their pedigree. Take the old well-known Hybrid Perpetual, Madame Laffay, as the standard in this class. Its scent has been compared by some to almond paste, and is quite distinct from the rich astringency of the Damask Perpetual, and the well-known Provence or Cabbage. Here, again, how readily the slightest cross with the Cabbage or Moss is to be distinguished, and I am glad to see Mr. Rivers has noticed this in his valuable work, "The Rose Amateur's Guide," and descriptive catalogues, as perfume, the most delightful attribute of the Rose, has been too much overlooked in describing its other perfections. No class of flowers on the face of the earth is so charmingly varied in this respect. There is a very pretty old climber, well known to most Rose lovers, by the

name of Ayrshire splendens; with its color I have not to deal. I believe I could most readily distinguish it from all others by its scent, which has not any trace of the sweetness of the Rose, but a powerful odour of myrrh. As a contrast to this, the climbing white Banksia has the delightful scent of Violets. Then there are the Austrian Briars. Yellow and Copper, which are very singular and distinct in odour. The little Double Scotch Rose (*Rosa spinosissima*) has quite a charming scent of its own, reminding some of attar of Roses, others of Scotch snuff! Even the young foliage of several families is distinctly scented, as is well known in the case of Sweet Briars, Mosses, and others.

I fear many of our readers will think I have drawn distinctions without difference in describing the above varieties of perfume, but I believe I can array on my side a goodly list of lady amateurs and brother cultivators, and I shall be more than satisfied if my remarks cause them to revel more in the sweets of their Roses. In connection with perfume I must not omit to allude to a more material point, the extract or attar of Roses. The petals of the Rose are beautiful objects viewed under the microscope; their little vesicles of highly volatile essential oil, which secrete the scent, are distinctly visible. The glands on the foliage of the Sweet Briar and sepals of the Moss Rose are very interesting objects. It is a singular fact that our splendid double Damask and Tea Roses will not produce the attar like the semi-double Roses of Persia and India. This is clearly attributable to the greater heat of their climate ripening, if I may so term it, or secreting from the petals more of the essential oil of Roses.—R. CURRIE, in *London Florist*.

THE EQUINETELY APPLE.*

THIS fine apple may be considered as one of the best among the southern native winter varieties. It originated, if my memory is correct, near the mountains which form the northern boundary of the Carolinas and Georgia, and where so many fine varieties have been found of late, and brought into notice by our zealous amateurs, J. Van Buren, Mr. McDowell and others.

The tree is a very vigorous, upright grower, with thickly set and stiff foliage, retaining something of the appearance of a wild seedling. The fruit is large or above medium; of a deep red and yellow hue, about the form of a *Fall* pippin. Its flesh is very tender, white, and juicy; with a delicious vinous taste, and a peculiar aroma, more delicate than the well-known spicy aroma of most of our southern native varieties. It is in my opinion a superior fruit in all respects. It keeps and ripens handsomely, till February at least, but with good management and convenient cellars I have no doubt that its season of ultimate maturity can be protracted till April, even in the South; while further north it would prove to be entirely a winter fruit.

Its foliage is dark and profuse. The wood of the shoots is of a purplish hue, dotted with ash-gray speaks, very apparent, and woolly towards the extremities. A fine erect grower, and of great promise to our orchards.—L. E. BERCKMANS.

* See Frontispiece.

A VISIT TO SAWBRIDGEWORTH, HERTS, ENGLAND.

MR. RIVERS' pleasant home stands on the top of a bank sloping to the road, and that bank is like a cataract of flowers, covered with white Roses, as though a million of butterflies were resting there awhile, and brightening the scene as if a large supply of newly made stars were there, awaiting their distribution in the firmament.

Of the Roses at Sawbridgeworth what shall I say? Acre upon acre, regiment after regiment of stately standards, lake after lake of dwarfs, "dazzle the eye and bewilder the brain," as the jewels and gold of the Baron (was it Larray or de Heckeren?) bewildered the fickle Imogene! "There is a nice little patch of Mosses," said Mr. Rivers, the said *patch* being the size of my whole collection, and a beautiful Rose garden in itself.

Of Roses new to me I thought Arthur de Sansales, Cardinal Patrizzi, and Prince Noir very striking in color, and, for the sake of contrast and novelty, to be added to every collection: they are very dark in tint, and, though not large, effective. Louise Magnan, Raphael, and Comte de Nanteuil I had never seen in their beauty; and "when found" I "made a note of." Ornement des Jardins, brilliant, but small. Bacchus anything but "jolly," and looked as though he had ruined his constitution by excess. Triomphe de l'Exposition, very bright and cheerful, uniformly attractive and good. A new Rose called Thomas Rivers is not so good-looking as its namesake at present, but I thought I saw a promise of great improvement when more established, and in a favorable season. Of all Roses which I had not previously seen in their perfection, I liked Madame Vidot best; and, next to her, from the fine shape of the flowers and the free habit of growth, Madame Ory,* perpetual moss. Of sorts well-known to us all, I think the most beautiful were Lord Raglan, Jules Margottin, Madame Rivers, Prince Léon, Angelina Granger, General Brea, Madame Place, General Jacqueminot (larger than usual), William Griffiths (this year quite as good as his rival Mathurin), Caroline de Sansales, Madame Duchere, Madame Phelip, General Castellan (grandly gorgeous), L'Elegante Nouvelle, and fifty others. It is indeed invidious to particularize, and the more one says of such a display, the more one seems to leave unsaid.—*Géant des Batailles*.

"HANDY HELPS TO USEFUL KNOWLEDGE."

UNDER this title is publishing in London a series of penny treatises on whatever may be the topics of the day. They are marvelously cheap, and necessarily on very varied themes—from "Eclipses" to "Mormons," from "Sir Colin Campbell" to "The Leviathan." They are good epitomes of information, relative to subjects of which every one is talking. "The In-Door Naturalist" gives hints and directions for constructing and stocking Wardian Cases, Aquaria, &c. It concludes with the following extracts from a century-old pamphlet on "The Water Garden:"

"It is entitled, 'A Flower Garden for Gentlemen and Ladies; or, the Art of Raising Flowers without Trouble, to Blow in full Perfection in the Depth of Winter, in a Bed-Chamber, Closet or Dining Room.' From this

* Madame Ory bloomed in our garden at Germantown till November last, and is really that long sought acquisition, a Perpetual Moss.—ED.

strange old book we will take the liberty of making such extracts as are likely to interest the in-door naturalist, to whom we must leave the task of verifying the statements which they contain.

"I flatter myself," says our quaint author, 'that the following improvements in the delightful art of gardening, as it has hitherto escaped the thought of the curious, will meet with no unwelcome reception, it being a contrivance to divert the ingenious, in a place and at a time they cannot be otherwise furnished with those pleasing objects of delight; that is, to raise many sorts of flowers in a chamber, in the greatest smoke of London, and in the midst of winter, and to have them blow in full perfection within the twelve days of Christmas, as I had myself in the last Christmas past.

"I shall run into no extravagances, and only give the reader what I performed with very little trouble, leaving the improvement thereof to better understandings.'

"After having described his early experiments, in which he succeeded in raising Tulips, Snowdrops, Crocuses, and other plants in large basins, filled with good garden mould, he arrives at the conclusion that earth can be entirely dispensed with, and that the plants may be made to flourish in water alone."

"I resolved to trust to the effects of water only;,' he continues, 'that is, without earth, which would be a much neater and cleaner way, and might be more acceptable to the curious of the fair sex, who must be highly pleased to see a garden growing and exposing all the beauties of spring flowers with the most delicious perfumes thereof, in their chambers or parlors—a diversion worthy the entertainment of the most ingenious; but yet further, to bring this to a more profitable use, by raising young salads in the same place, and all with very little trouble or charge.

"I bought some dozens of flint glasses, of the Germans who cut them prettily and sell them cheap. I bought them from whole pints to halves and quarters. These glasses are wide at the top, and are made tapering to the bottom, which renders them very convenient for this use. I likewise bought some glass basins, as large as I could get, and took care to choose them also tapering from top to bottom; then I fitted pieces of cork, about half an inch thick, to the inside of the tops of the glasses, which I could not sink far in, by reason of the glasses being less all the way from the top to the bottom, as aforesaid. In these corks I cut holes proportional to the roots which I designed to place upon them. Some glasses would hold two roots, some but one, and some three or four. The corks on the basins had many less holes cut in them, in order to place on them a number of smaller roots, which might blow together with the more splendor. Being thus prepared, which was all my charge and trouble that way, my next business was to get the flower-roots. A little before Michaelmas, I accordingly made a small collection of Polyanthus and Narcissus roots, several sorts of Hyacinths, Tulips, Crocuses, Daffs, Jonquils, &c., all large-blowing roots, or the labor of rearing them would have been lost. These I placed upon the corks in glasses proper to their size, the Crocuses on the corks in the basins, that they might, being of various colors, blow together to make the more pleasing object. Before I placed these dry roots on the corks, I filled the basins and glasses only just to the bottom of the corks, so that the bottoms of the bulbs, would but just touch the water, of which I take the Thames water to be the best, as being

strongly impregnated with prolific matter, like rich earth well manured for corn or garden use. My dry roots being thus placed in my windows, some of them even with the panes, others with their tops only even with the bottom of the sash, which, by the way, I kept always shut because my glasses hindered the opening of the casement; but, doubtless, a little air in very fine weather, when the wind was only in the south or west, and when there was no frost, would have been very advantageous to the plants—I took particular care that no water should be filled up to wet any more than just the bottoms of the bulbous roots, for that certainly would have rotted them, and have destroyed all my hopes.

"In a few days after I had placed my spring flower-roots on the corks over the water, they threw out their white fibrous roots strongly into the water, which was a most diverting pleasure to behold. The whole process of that germination (if I may so call it) was visible through the glass. When the glasses were pretty well filled with these fibrous roots, that is, when there were enough to draw sufficient strength for the nourishment of the leaves, stalks, and flowers, the green buds first appeared, which soon shot into leaves, and the stalks with the flower-buds soon followed, all as strong, or, I may say, rather stronger than the garden does afford. They grew so fast, and yet with a full strength, that I had Polyanthuses and Narcissuses blowing out in perfection before Christmas-day, with all their perfection of color and perfume. Several Hyacinths followed them in the same manner. The Crocuses would have been equally early, but I could not get any roots to my mind till some time after Michaelmas, which occasioned their being later than the rest of their companions. I at last met with the large roots of the great blue Crocus, which blows late, and very often not at all. The yellow Crocus, and the white-striped, or very pale blue, are the forwardest, and the best to be chosen for our use.

"At a time when the gardens are divested of all their beauty, this early production will supply the curious ladies with most agreeable perfumes for their chambers and parlors, and with nosegays to adorn their bosoms at Christmas, when they dress their houses with evergreens. It must be remembered that the rooms in which this gardening is carried on must have fires in them every day, as I had in my chamber, which was kept with reasonable warmth all the day and evening, but not at night. These exceedingly forward rarities are certainly most grateful to the exterior senses; but this leads me to a more useful fact, namely, that by the same means you can produce, as early as you please, something that may be acceptable to the taste, and nourishing to the microcosm, or little world—the body; that is to say, that you can raise fine young salads in the coldest part of winter, in any warm room, as aforesaid, and very nearly after the same manner."



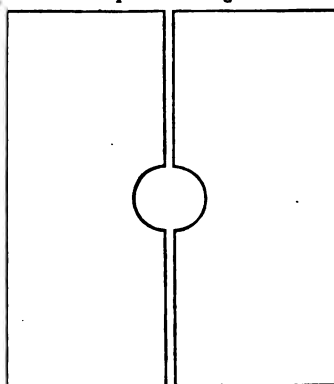
CULTIVATION OF THE GOOSEBERRY.

BY THE HON. P. B. DE BLAQUIERE, YORKVILLE, TORONTO, CANADA.

A GENERAL complaint exists in this vicinity in the cultivation of the Gooseberry, from mildew invariably appearing, when the berry is well formed; and the fruit afterwards mostly dropping of; what remains being quite useless. The soil is very sandy, resting on clay.

Four years since I planted, where I reside, three dozens of the choicest sorts, all fine plants, with single stems; they are well grown and handsome bushes; but notwithstanding every care in the culture; and various experiments, each season has been attended with the same disappointment, from

When placed on the ground



the two edges are to be joined.

mildew, until the present year; when, following the plan of a neighbor, who has always an abundant crop. I introduced under each bush two large stout shingles joining at the stem, and enclosing thus, extending to the outside of the branches, *on the ground* (my neighbor uses boards). The result has been a fine crop free from mildew, in a season when *every other* description of fruit in my garden, and with others, is a complete failure.

One bush in another compartment was not thus treated; and all the fruit on it was mildewed, and dropt off.

This information may perhaps be useful to others, through the medium of your widely circulating, and valuable *Horticulturist*, and I am therefore induced to send it. I think it important that the shingle covering should extend to the outside extremities of the branches. I fix them as soon as the fruit is set.

P.S.—I cannot but add how important a service would be rendered to horticulture, by exterminating the "*curculio*."

CULTURE OF SPECIMEN CINERARIAS.

BY DANIEL BARKER, SPRINGFIELD, MASS.

As the time for commencing the propagation of the cineraria for *Specimen Plants* for the ensuing winter and spring months, is just at hand, I beg to offer a few remarks with reference to growing them; bearing in mind that I write not for the practical florist, but only for the humblest capacities. I shall therefore, in the plainest manner endeavor to give a few practical hints on the management of plants for specimens.

The Cineraria,—one of the most useful as well as the most beautiful of winter and spring flowering plants,—when seen under good cultivation is one of the many floral objects that possess great attractions to the eye. Its early period of blooming, its many varieties, combined with its compact habit of growth, render it desirable for the decoration of the green-house, conservatory, or the lady's boudoir, during the early spring months.

Apart from all this, when well grown specimens are exhibited at our

spring Horticultural exhibitions, what a crowd of fair visitors gather around and admire them, and justly so. Looking back some twenty years amongst the then best varieties of the day they were few in number, and very inferior in quality, compared with the beautiful varieties of the present day. For example, let the King Waterhousiana, Brewerii, &c., be placed by the side of such elegant varieties as Baroness Rothschild, Regalia, Prince of Wales, Mrs. Colman, &c., and the improved character of the cineraria will be finely illustrated. Well grown specimens of the improved varieties from six to eight feet in circumference, (many are grown much more) and from 12 to 30 inches high in full bloom, are noble objects which none can appreciate without witnessing.

CULTURE.—The soil in which I have found the cineraria to thrive best, consists of two parts of good turfy loam, and an equal part of good, old decomposed cow dung and leaf mould, with an admixture of pearl and silver sand, mixing a little charcoal with it about the size of small walnuts. Not later than the middle of August, select the strongest offsets and pot in well drained small pots, being very careful not to saturate the soil by watering them. Place them in a cool frame near the glass, being careful to shade during hot weather, but never shade when not absolutely necessary, as by so doing the plants would draw up weak, which must be strictly guarded against, as good strong dwarf growth must be encouraged from the time of separating the offset from the parent stem, until the expansion of the first flower buds. Syringe overhead three or four times a week with clean soft water, which will not only tend to keep the plants clean and free from insects, but will greatly encourage the full development of the foliage. When the plants are well established in the pots remove the sash entirely, and if the weather should be hot, shade during the hottest part of the day with canvas. When the pots are well filled with roots shift into well drained 4 or 6 inch pots, according to the strength of the plants, giving them rather a liberal supply of water at the root and overhead. Never allow them to suffer for the want of water, or spoil them by an over abundance, each extreme must be carefully guarded against. By the middle of October, if they have been well attended to, they will be large enough to receive their final shift into 12 or 14 inch pots.

These pots must be *well drained*,—place over the hole in the centre, an oyster or clam shell; over this an inch of broken pots, and then from one to two inches of rough loam or moss, for the final shift I have used the following compost with very satisfactory results; equal parts of good turfy loam, peat and leaf mould, one fourth rotten sheep dung, a few handfuls of good white sand with a small portion of small pieces of charcoal all well mixed up together; after potting, replace them in a cool frame close to the glass, in which situation they should remain as long as the weather permits. Allow a free circulation of air at all times when it can be safely done, syringing overhead occasionally, and being very careful to keep down the green fly by frequent fumigations of tobacco; the plants will soon commence to throw up these flowering stems, which must be stopped when about two inches high and kept down to the surface of the pot, by pegging or otherwise.

When frosty weather occurs the plants must be removed to the greenhouse, as near the glass as possible; give occasional waterings with manure water (once a week will be ample), being careful to give a free circulation of air at all favorable times, and paying strict attention to cleanliness, keeping down the green fly by fumigation; and should mildew make its

appearance by a slight dusting of sulphur upon the parts affected. A great drawback to the well being of the cineraria during the winter months is the close proximity to flues and pipes; to obviate this I place boards covered with one or two inches of sand upon the stage above the flues, upon which the pots are placed; watering the sand occasionally, as the stems continue to grow. Let each be tied out separately to neat clean sticks. Sufficient I think has been said with regard to growing the plants, and if followed up I am sure it will not fail to reward the grower by their extra beauty. Should any readers of the *Horticulturist* require more information upon this popular flower, I shall be happy to give it, so far as I am able.

WINTER FORCING AND PROPAGATING HOUSE.

BY DANIEL BARKER.

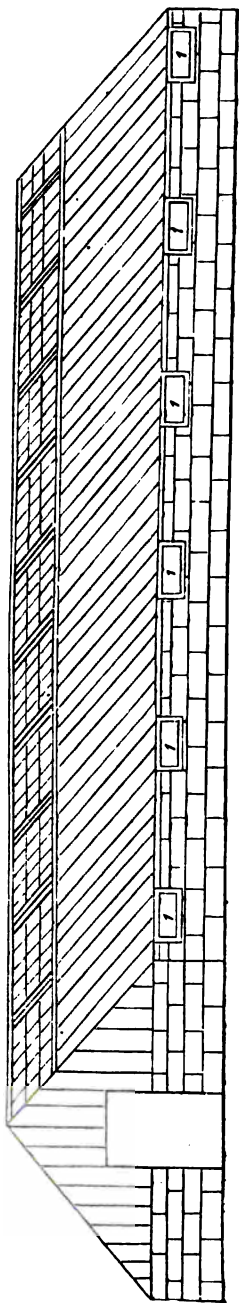
AGREEABLY to your request I forward a plan of my Winter Forcing and Propagating House, hoping it may prove useful to the class for whom it is designed, viz., the amateur and market gardener.

Although I cannot claim the merit of first introducing the novel mode of tank heating which I am about to describe, (that being due to the Messrs. Hendersons, London, England,) I can say that to the best of my knowledge I was the first to carry it into practice in this country. I will at once proceed to state what I consider to be its advantages over all other kinds of forcing houses, which have come under my notice. First, the bottom heat is much more regular, steady, and effectual, than from the common tank, or dung bed. Hence, it is much more congenial for the full development of roots, foliage, and fruit, than by any other method. Secondly, a much greater variety of plants can be grown together with advantage. Hence, the adaptation of such a house for the amateur and market gardener, whose dependence must of necessity be upon early productions. The raising grape vines from single eyes in such a structure, is attended with the most complete success; the eyes put in by the first week in March, will under ordinary care attain the height of from six to eight feet by the fall, with the wood perfectly ripened.

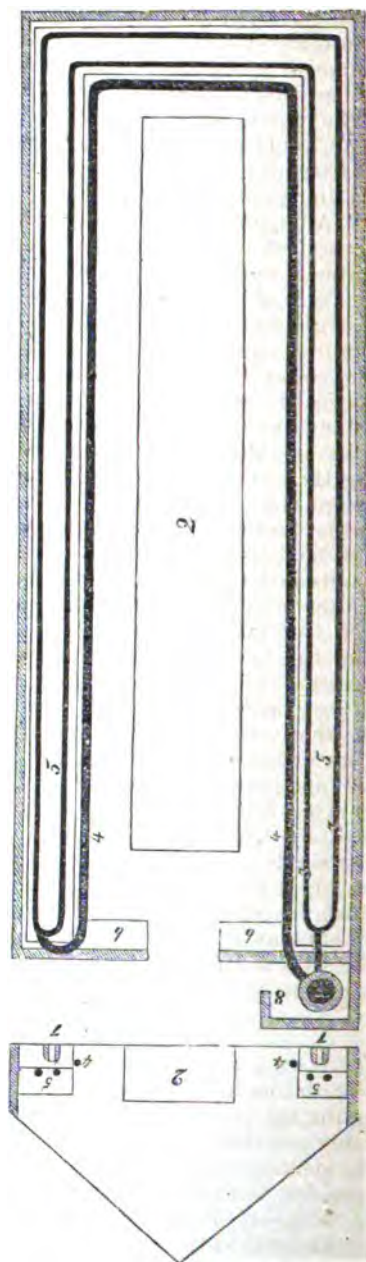
The strawberry can be cultivated and its fruit ripened to great perfection; there is no fruit we possess of so much value to the market gardener. A great deal might be said here upon the forcing and culture of this universal favorite, but I feel that I am already trespassing too much upon your space. Those who are desirous of having early Cucumbers, Melons, Tomatoes, Rhubarb, Sea Kale, &c., can be gratified to their heart's content in such a structure.

There is no subject connected with decorative gardening, of so much importance, as being provided with the means of raising a good supply of summer bedding plants; here all kinds of soft wooded green-house matters can be raised with the greatest facility.

In conclusion I wish to make a few remarks, which I hope will be of service to the amateur; it is an indubitable fact that more plants are annually killed by over kindness, than by neglect; over watering in winter, using a soil of too stimulating a nature, and by keeping up the temperature too high, are a few of the many evils which the over anxious amateur is likely to fall into; in visiting such a house notwithstanding it may have cost hundreds of dollars, and be attended with the most assiduous care, you may perceive death written upon the lanky visages of nearly all the inmates.



WINTER FORCING AND PROPAGATING HOUSE.



GROUND PLAN.

The grand secret of managing the winter forcing-house is good air, good soil for the plants, and good tepid water when necessary. To enter into detail upon the management of the house, and of each tribe of plants would occupy too much space, but should a few practical remarks be deemed desirable upon them at some future time, I shall be pleased to comply.

In the construction of the tanks which I have used, I have found it essential to differ somewhat from those of the Messrs. Henderson in the filling up size of the pipes, &c. The tanks are made with well seasoned $1\frac{1}{2}$ inch white pine, being careful to select such boards as are quite free from knots; they are carefully tongued and grooved and put together with white lead.

Size of the tanks 15 inches deep, $3\frac{1}{2}$ or 4 feet wide, according to circumstances. After the circulation is proved to be perfect, the tank is filled up as follows; first with a layer of clean stones about the size of a medium sized nutmeg melon; upon these a layer not as large; and then a layer about the size of a pigeon's egg, then a layer of rough gravel, then more not so rough, and so on, until the top is of the finest sand. Here I would add a word of caution in selecting sand for rooting cuttings, in being very careful to select such as contain no acid of iron or any vegetable matter; to effect this the sand should be washed till the water can be poured away quite clean; unless the washing is well attended to, the rooting of the cuttings may be attended with very unfavorable results; the part used for plunging the pots containing cucumbers, &c., should be filled the same as for propagating, but the sand will not require washing.

After the tanks are filled up, one foot of water may be let in and the pipes will heat the entire mass to from 70° to 85° , more or less, and once that heat is obtained a few hours' firing, morning and evening, according to the state of the external atmosphere will be sufficient to keep it up. Four inches of sand will be sufficient to keep down all the vapor in midwinter, the water can be withdrawn by means of a cock, and then a most congenial and beautiful dry bottom heat will be the result. The kind of material used in the construction of such a house will of course depend on circumstances; those which I have put up, for the walls I have used good oak or cedar posts four inches square, close boarded on either side and filled in with lath and plaster; the roof is two-thirds a fixture, the upper parts swing on pivots or hinges, and are opened and closed by the same means as described by Mr. Chorlton, on page 52 of his valuable work, the *Grape Grower's Guide*.

Much might be said upon the location for such structures, the adaptation of the tank for other kinds of houses than span roofed, the kind of boiler, &c. But should any of your readers require any further information upon the plan, &c., it will afford me much pleasure to render them all within my power, privately or otherwise.

REFERENCES TO NUMBERS ON PLAN.

1. Ventilators in front wall.—2. Pit with movable top. During the winter months the top is closed, and the pit kept filled with Rhubarb which forces admirably; during the summer, the top is removed and the pit filled with some fermenting material for plunging young grape vines in.—3. Two 2-inch pipes passing through the tank.—4. Return pipe passing round the outside of the tank.—5. Tank.—6. Potting Bench.—7. Smoke flues which pass directly under the tank around the house.—8. Boiler House.

SENSITIVE PLANT.

THE movement of the leaves of the *Mimosa pudica* have their origin in certain enlargements, situated at the articulation of the leaflets with the petiole, and of the petiole with the stem. Those only which are situated in the last articulation are of sufficient size to be submitted to experiment. If, by a longitudinal section, the lower half of this swelling be removed, the petiole will remain depressed, having lost the power of elevating itself; if the superior half be removed, the petiole will remain constantly elevated, having lost the power of depressing itself. These facts prove that the motions of the petiole depend on the alternate turgescence of the upper and lower half of the enlargement, situated at the point of articulation: and that contractibility is not the principle of these motions. If one part of the plant be irritated, the others will soon sympathize, or bear witness, by the successive falling of their leaves, that they have successively felt the irritation. Thus, if a leaflet be burnt slightly by a lens, the interior movement which is produced will be propagated successively to the other leaflets of the leaf, and thence to the other leaves on the same stalk. A very clever French experimentalist, Mons. Dutrochet, found, 1st—That this interior movement is transmitted equally well, either ascending or descending. 2d—That it is equally well transmitted, even though a ring of bark has been removed. 3d—That it is transmissible, even though the bark and pith be removed so that nothing remain to communicate between the two parts of the skin except the woody fibres and vessels. 4th—That it is transmissible, even when the two parts communicate merely by a shred of bark. 5th—That it may be transmitted even when the communication exists by the pith only. 6th—But that it is not transmissible, when the communication exists merely by the cortical parenchyma. From these very interesting experiments, it results that the interior movement produced by irritation, is propagated by the ligneous fibres and the vessels. The propagation is more rapid in the petioles than in the body of the stem; in the former it moves through a distance of from three to six-tenths of an inch in a second; in the latter, through from eight to twelve-hundredths of an inch, during the same portion of time. External temperature does not appear to exert any influence on the rapidity of the movement, but very sensibly affects its extent. Absence from light, during a certain time, completely destroys the irritability of the plant. Such change takes place more rapidly when the temperature is elevated, than when it is low. The return of the sun's influence readily restores the plant to its irritable state. It appears, therefore, that it is by the action of light, that the vital properties of vegetables are supported, as it is by the action of oxygen that those of animals are preserved, consequently, etiolation is to the former what asphyxia is to the latter.

M. Desfontaines has shown that plants, even in their motions accommodate themselves to an alteration in their condition. This naturalist took some sensitive plants with him in a carriage; and observed that as the carriage began to roll, the plants at first trembled and drooped; but soon, accommodating themselves to the jolting, gradually began to raise their heads until the leaves had gained their usual position on the stalks. He repeated the experiment several times, and always with the same results. If the carriage, after a brief halt went on again, the leaves would droop forthwith,

but the danger of being shaken from their petioles was soon removed by the plants re-assuming the erect position, which they then continued to retain.

GRAPE HOUSES.

My remarks in favor of curvilinear roofs, do not appear to have had much influence with Mr. Saunders; but as I do not consider them quite disapproved by his last communication, I have a short rejoinder to make respecting two or three points in his article. I have no desire or intention, however, of embroiling myself in a controversy, concerning what many regard as a mere matter of taste and opinion, particularly as there is so little probability of either party being converted.

Mr. Saunders' assertion that grapes can be grown as well and easily, under a straight, as a curved roof, I do not gainsay, as his experience is much more extensive than my own; but some other of his arguments I shall not so readily admit.

Regarding the cost, the next most important point, he states that the necessary additional expense of a curvilinear roof is "over *thirty* per cent." Now I am informed by a practical mechanic, who has devoted much time and study to this subject, and is engaged in erecting such structures, that he is willing to contract to build curvilinear houses at an advance of *ten* per cent upon Mr. Saunders' prices for angular ones, the finish to be, in every respect, equally good.

I differ from Mr. Saunders in regard to the deficiency of architectural beauty and proportion of which he speaks. In giving the dimensions of a curvilinear house, he allows but two feet for the height of the front wall, which I consider a quite too low base for either a curveal or straight rafter to rest upon, and see no good reason for restricting it to that height. Did such a necessity exist in either instance, I should think that his objection would apply with equal force to both cases.

As to "the difficulty of equalizing the temperature" in "narrow, high houses," I do not consider it necessary that a curvilinear roof should be much higher in proportion to the width than an inclined one. That they are not unfrequently constructed in that manner is not to be denied, and Mr. Saunders will doubtless admit that he has seen "narrow, high houses" with right lined roofs, but my remarks (and I presume also those of Mr. Saunders,) are not intended to apply to either extreme, but to the most approved form of each class.

Mr. Saunders deserves some credit for the ingenuity with which he equalizes the training surface, by considering the upright glass of the one construction as a part of the roof, and assuming that none exists in the other. It is the case however, in most of the curvilinear houses that I have observed, that a large part of the front—usually from one and a half to two feet—consists of glass, affording nearly the same amount of upright surface as in the former instance.

Like Mr. Saunders, my views of the subject remain unchanged, but if they are erroneous, I have no constitutional objections to being convinced. If that event should happen, I shall not fail to make it manifest.—JOHN B. EATON.

APIOS TUBEROSA—GROUND NUT.

I notice your inquiry in regard to this plant. It grows naturally in rich, moist places, forming a vine of much beauty, with its dark, pointed leaves. The flowers are brownish purple, borne in small, compact clusters. Their fragrance is their greatest beauty, resembling the perfume of the finest green tea. It is easily cultivated by planting its tubers, and as a covering for such work or to cover a low trellis it is worthy of notice. The tubers are oblong, arranged a few inches apart on a root attached to each end. The first year they do not grow larger than a pigeon's egg, but the second they become as large as a hen's egg. The skin is thick, and does not peel off easily. When dug in the spring and baked or roasted, the flesh is mealy and pleasantly flavored, though sometimes a little stringy, and darker than that of the potato. I have often eaten them without injury, and apprehend no danger from their use, though the yield of tubers is too small to render their cultivation profitable.—T. S. G., *West Cornwall, Conn.*



Kemp's HOW TO LAY OUT A GARDEN.—Second Notice.

We proceed to give three or four more illustrations from this book, and regret that space does not permit of more extracts from other portions of the volume; but as it will form a part of the libraries of so many of our readers, we need not more fully forestall their perusal of it.

"When any broad sheet of water," says our author, truly, "such as the sea, a large river, or a lake, forms the principal object from the front of a house or from some point in the garden, the value of a good irregular foreground will be apparent. A great glare of water is seldom agreeable to the sight; and in some kinds of water may be most disagreeable and melancholy. The passage across it of vessels of all sorts, like-

wise, becomes far more interesting and delightful where it is only to be observed at intervals, and is occasionally lost sight of. If water be looked at through a leafy scene, it is moreover in some degree sobered down thereby. It does not dazzle or pain the eye so much. It has all the charm of light and shadow. Its own lustre and loveliness are brightened by the contrast. It is a gem with a dark setting." Fig. 1.

One of the most important points of landscape gardening is, to provide continuous views through plantations, and here we have some just remarks on the subject:

"The house must always be regarded as the *chief point of vision* in a place, and the best views of the grounds should consequently be had from it. The windows of a house are a great deal more used for looking at a



FIG. 1.

garden than any other position; and the points of interest can there be inspected more leisurely. For this reason, and because occasional visitors see a garden more from the windows of a house, it is a good plan to form, in laying out a garden, a series of lines radiating from one, two, or three principal windows of the house, at irregular distances apart, towards the outside boundary; and place the requisite specimens and groups, solely within the triangles thus made, according as they may be wanted; never suffering the specimens near the house to be so large as to cover a greater space at the broad end of the triangle than may there be required as a plantation, and disposing the whole of them so irregularly, as that nothing like lines of plants shall ever appear. The practice of such a system need in no way interfere with the beauty of the lawn as seen from other parts. This can just as easily be obtained at the same time. Indeed, cross lines

from all the openings at the sides of a place will be of equal service in the formation of subordinate views or minor glades. A slight illustration of this is offered in the arrows between the dotted lines denoting the various openings or glades, both from the principal window and from the sides of the lawn." Fig. 2.

A large portion of the work is devoted to the subject of flower gardens,

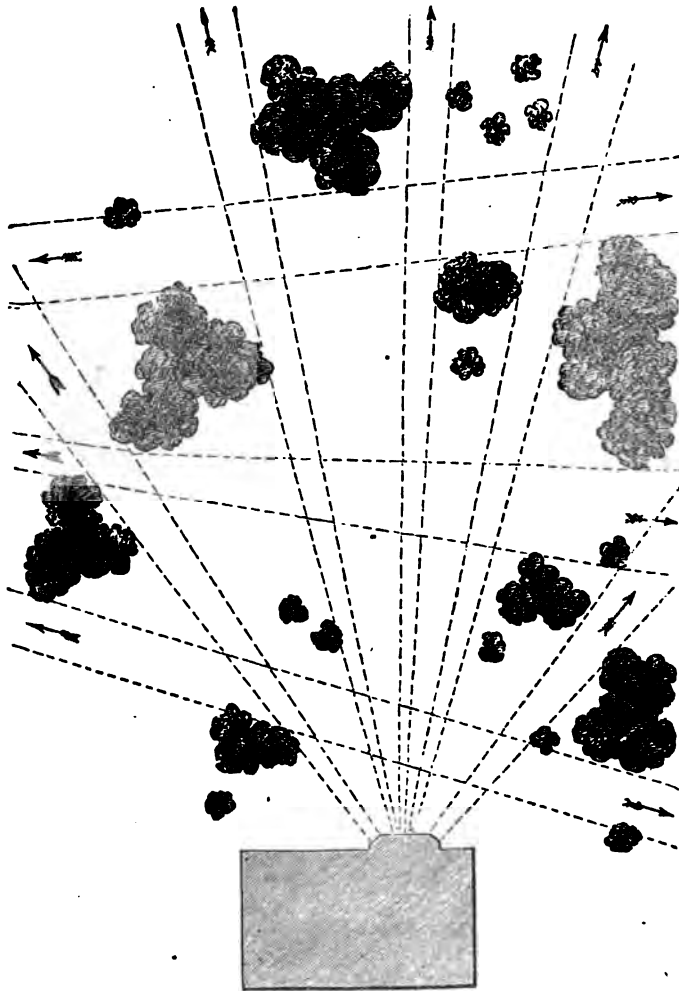


FIG. 2.

which are treated of in their various examples of geometrical, architectural, and irregular. Although at the outset the author remarks that "the beds of a flower garden should be symmetrical, and fit nicely into each other," he has signally failed in carrying out his own suggestions in the many plans which are given. It is not too much to say that with the exceptions

of Figs. 160 and 161, (which by a little thinning out, would form a pleasing arrangement of the flower beds) there is not a truly artistic design; many of them are ridiculous and beneath criticism; the positions they occupy, which is by far the most important point the landscape gardener has to decide upon, are also unhappily selected. He falls too often into the error of dotting what might otherwise be a desirable and pleasing fragment of lawn, over the whole surface with an unmeaning assemblage of beds and

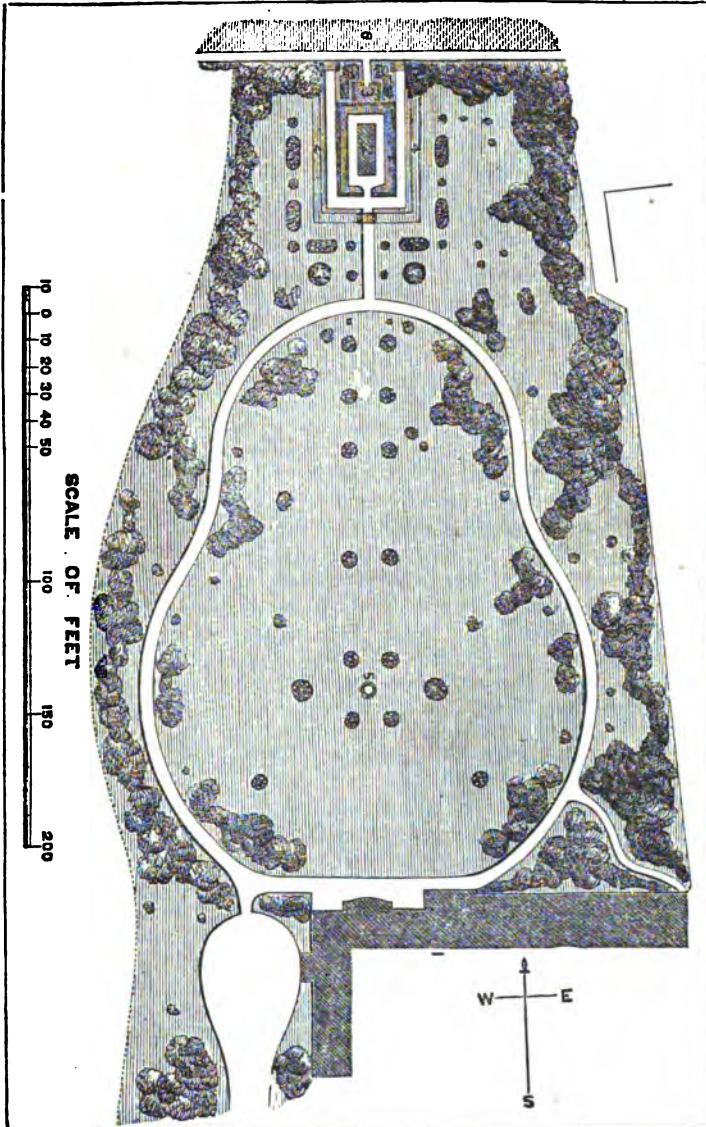


FIG. 8.

single plants. Fig. 3. (155 of the book), one of the best of the plans given, (all things considered we would pronounce it the very best,) illustrates the defects to which we have alluded. Here the aim is to make a formal, narrow vista from the house, to the green-house. To effect this, two parallel rows of flower beds cross the lawn exactly through the centre, which not only destroys all breadth of effect, but fails in producing the feature evidently intended, viz. to direct attention to the ornamental green-house in the distance. A far bolder and more effective result would have been attained, if the centre of the lawn had been kept free of beds, shrubs, and water-basins, and the shrubbery near the lower end of the lawn, in front of the green-house had been brought out into the lawn so as to form a dense mass through which a vista might have been formed; then as a frame to the picture, place a compact, conical growing tree on each side of the bay-window of the house, and a pleasing vista would be produced, and retain a sufficiency of clear lawn to give a charming effect. This is not by any means a solitary instance of over planting, or *dotting*, as Loudon well termed it. Most of the plans are defective from an anxiety to plant Hodgkin's Hollies, and *Andromeda floribundas*.

Carriage roads to the house are so evidently necessary and being the first position from which the house and its surroundings are viewed, that their proper location and direction is of the first importance. On this subject the author has very valuable remarks, and he illustrates his ideas by several engravings which are instructive. Fig. 4. we have had engraved for the purpose of remarking that we consider it one of the worst arrangements for an entrance. It is of course, an arrangement for a house near the outside road, and the group of shrubbery in front is intended to

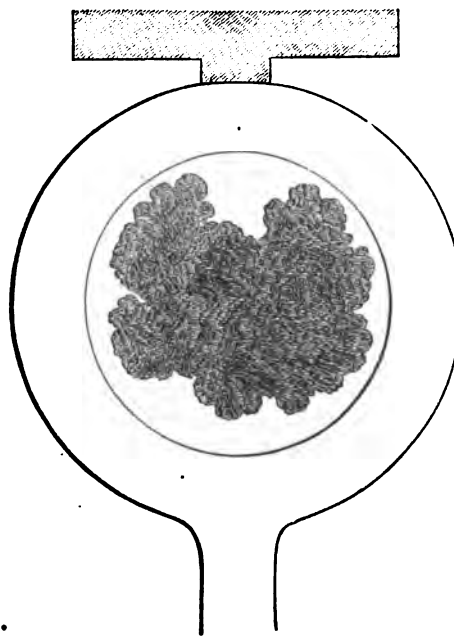


FIG. 4.

screen the front door. So far it is desirable, but the road in this position tends much to destroy isolation in front, and breaks up the front lawn so as to defeat, in a great measure the object intended to be gained. A better arrangement in such instances is to bring the entrance in on one side, and provide a carriage turn on the other; or, have two gateways, one on each side, so as to preserve the front entire; this is the most desirable in limited fronts, and is only more extensive in so far as the cost of the first construction of an additional gate; the amount of road in both cases being nearly alike.

Mr. Kemp's principles are better than his details; whilst he seems to comprehend and display a familiarity with the rules that govern taste, the details of his plans are open to much criticism. There are a few features which seem always present; straight walks terminating in, and

their continuity shortened by small, unmeaning circles, are too frequently introduced, even in positions where their continuation would evidently lead to increased perspective beauty.

Again, his groups and trees are in the main very judiciously located, but the details in their planting are as injudiciously wrought out. There is no harmony or system in the selection of plants for the developments of the groups, and in positions where a full sized tree would be in the very best position we find a *Rhododendron* or *Mahonia* located. This is, after all, the one thing desirable in a popular treatise on landscape gardening, and as it is one which can only be properly treated after a long and extensive experience, and a thorough knowledge of the growth and peculiar characteristics of trees and shrubs, it is the least of all entered upon by writers on the subject. It is the want felt by most men of educated taste and no practical experience. They know where a certain formed group would be well placed, but they do not know the best material of which to form such group.

With these remarks, and referring again to the lists of plants as not adapted to our wants, we leave the book to the consideration of the public.

PROFESSOR OWEN'S ADDRESS before the late meeting of the British Association at Leeds, is an impressive document. Alluding to the topics of this journal, he goes on to say:—

"In the operations of nature there is generally a succession of processes co-ordinated for a given result: a peach is not directly developed as such from its elements; the seed would, *a priori*, give no idea of the tree, nor the tree of the flower, nor the fertilized germ of that flower of the pulpy fruit in which the seed is buried. It is eminently characteristic of the Creative Wisdom, this far-seeing and prevision of an ultimate result, through the successive operations of a co-ordinate series of seemingly very different conditions. The further a man discerns in a series of conditions, their co-ordination to produce a given result, the nearer does his wisdom approach—though the distance be still immeasurable—to the Divine wisdom. One philanthropist builds a fever hospital, another drains a town. One crime-preventer trains the boy, another hangs the man. One statesman would raise money by augmenting a duty, or by a direct tax, and finds the revenue not increased in the expected ratio. Another diminishes a tax, or abolishes a duty, and through foreseen consequences the revenue is improved. Water is the cheapest and most efficient transporter of excreta: but it should be remembered that the application of the water-supply as a transporting power is to be limited to all that comes from the interior of the abodes: this alone can be practically applied to agriculture. Whatever flows from the outside of houses, together with the general rain-fall of the town area, should go to the nearest river by channels wholly distinct from the hydraulic excretory system. Agriculture, let me repeat, has made, and is making, great encouraging progress, but much yet remains to be done. Were agriculture adequately advanced, the great problem of the London sewage would be speedily solved. Can it be supposed, if the rural districts were in a condition to avail themselves of a daily supply of pipe-water, not more than equivalent to that which a heavy shower of rain throws down on 2000 acres of land, but a supply charged with thirty tons of nitrogenous ammoniacal principles, that such supply would not be forthcoming, and made capable of being distributed when called for within a radius of one hundred miles? To send ships for foreign ammoniacal or phosphatic excreta to the coast of Peru, and to pollute by the waste of similar home products the noble river bisecting the metropolis, and washing the very walks of the Houses of Parliament, are flagrant signs of the desert and uncultivated state of a field where science and practice have still to coöperate for the public benefit."

(Reported for the Horticulturist.)

- FRUIT GROWERS' SOCIETY OF WESTERN NEW YORK.

THE summer meeting of the Fruit Growers' Society of Western New York, was held at the Court House in Rochester, on Wednesday, Sept. 29th, at 11 o'clock, A. M.

The following are the subjects discussed:

STOCKS—their influence, and the propriety of selecting or rejecting the different stocks commonly or uncommonly used for pear, plum, peach, and other fruits.

PEARS—can they be grown profitably for mankind? and if so, in what way, and under what circumstances? What are the most frequent causes of the failure of the pear?

GRAPES—best varieties—best modes of cultivation—&c.

Stocks—Mr. J. J. Thomas spoke of the stocks upon which the pear was budded, and doubted whether anything better could be used than the stocks we are now using, provided they be healthy. It is of the utmost importance that strong, healthy stocks should be used, and none other, for either budding or grafting. The difference, caused by neglect on this point, was very great, and began to show very early in the life of the tree.

Mr. Barry thought that if the intention of the cultivator would be to neglect the tree, to let it take care of itself, the way was to use the pear stock; but if the land was to be cleanly cultivated, to be kept in heart and devoted to the crop of pears, as we devote other lands to crops of corn or wheat, then use quince stocks, and great crops were to be made from dwarf trees.—Whatever stocks were used, however, "use good of its kind."

Mr. Ainsworth, for general cultivation liked the free stock best, but to take a different course is worse than useless. On quince stocks the trees require, and must have, good culture. A gentleman cultivated buckwheat in his pear orchard the first year after planting; the second year he raised oats, and then he seeded the land down to grass and raised hay!! What was the result? Why, what few trees the meadow mice left and the blight spared, refused to grow thriftily, or to bear fruit, except in exact proportion to the kindness they had received. Mr. Ainsworth knew hundreds of trees not grown four feet, when those well tilled had grown twelve and fifteen feet. If you are going to neglect your orchard, don't buy trees on quince stocks. Mountain ash stock, which is sometimes used, is worse. The thorn, which is also occasionally budded upon, is very poor. The apple stock has also been used for the pear, but is no better, and fails to do well after a few years. In answer to a question as to which were most subject to blight, he was not able to say. All are, and much depends upon the soil.

Mr. Pinney had large orchards of pears under cultivation, and coincided fully with Mr. Ainsworth.

Mr. Barry remarked that this subject of stocks was of the utmost importance. In fact, stocks lie at the foundation of our success or failure in fruit growing. Of whatever tree it is, it must be good of its kind, for "puny stocks grow puny trees." We cannot be too strenuous in insisting upon good, sound, healthy, vigorous stocks. The merits of quince are, that the trees are of less size; that consequently they are better for gardens, and for circumscribed localities in cities or villages. 3d, they bear sooner, generally fruiting the third or fourth year from the bud. 4th, many sorts of pear are larger on quince bottoms than free stocks. Where the soil is well prepared, and the sorts of pear are adapted to the climate and locality, good two-year-old trees, properly transplanted from the nursery, will bear the first year after setting out.

On pear stocks we cannot get the earliest sorts under seven years from the bud.

On the quince stock, the pear is not as long lived as on its own free stock; therefore for permanent orchards, the pear is the stock. Do not think from what has been said here that the trees do not require care. Standard trees need cultivation as well as dwarf; and they will pay for it, too.

The idea of planting pears for profit, and seeding down the land to grass, is perfectly preposterous. Mr. Langworthy inquired as to the application of fresh manures. Mr. Barry replied that the

compost must lie for one or more years. The more thoroughly it was mixed and rotted the better. Fresh stable manures are dangerous.

Mr. Ainsworth spoke of the practice of some in taking the sucker stocks from the roots of old pear trees, and using them to bud on; but they make very poor trees. The best stocks are from the seeds of hard winter pears, gathered from healthy trees while the leaves are all hanging on. Differed from Mr. Barry as to the time when standard pear trees can be brought into bearing; but it is by careful and judicious pruning that the fruit growing is to be hastened.

Mr. Barry admitted that two or three sorts will bear very soon upon the pear, if often transplanted, and if pruned, as Mr. A. says; but it is only a very few sorts, and only with extra care: not generally.

Mr. Thomas remarked that Bartlett would bear very young on the pear stock, and that if we took pains to select Washington, Bartlett, and Belle Lucrative, we could get our standard trees into early bearing. As a general rule, dwarfs will bear much sooner than standards. For instance, a Tyson standard bears in fifteen years, a dwarf in four years, a standard Sheldon in ten years, while as a dwarf it bears in two or three years.

Mr. Ainsworth mentioned the pear orchard of Mr. Wheelock, of Moscow, N. Y., which this year was bearing twenty-two barrels of fine Tysons. From one tree only seven years old a barrel of nice fruit was sold this Autumn.

Mr. Langworthy always used to expect when planting a pear tree that it would be twenty-two or twenty-five years before it came to bearing; but the great improvement in the cultivation of dwarfs enabled a man to plant with some certainty of eating the fruit in a very few years.

Pears.—Mr. Thomas had once adopted the opinion that standard pear trees were the best for orchards, and dwarfs were the best for small patches of land. This opinion prevailed extensively, and was very difficult to root out. Dwarfs do well in large orchards if well treated.

Mr. Frost, of Schuyler, spoke of a very usual custom of setting dwarfs on each side of a walk in a garden; and this afforded a phrase concerning the tillage, whether in fields, orchards, or elsewhere, "Dwarf pear trees must receive garden culture."

Mr. Langworthy inquired whether it would even be admissible to have any crop whatever grown among the trees of a dwarf orchard.

Mr. Thomas replied that "the impediment was greater than all the benefit."

Mr. Pinney was strongly in favor of the dwarf pear—he had some 1500 trees under cultivation. The Bartlett was always one-third larger on dwarf than on standard trees. Raising pears at present prices is the most profitable business a man can follow in Western New York.^c The quince root does, when properly treated, spread over a large space, and absorb nourishment from considerable land. Has dwarf Bartletts eight or nine years old, which have not lessened at all in the quantity they bear.

Mr. Fisk spoke of the "most frequent causes of the failure of pear," and said one was the want of proper cultivation.

Mr. Barry spoke of opinions opposing high cultivation as those, as quite the common notion. The trouble is that the great bulk of the people know but little of what good cultivation means. Look at our grapes. Some magnificent ones are shown here to-day. See how superior some of them are to others. What makes them thus? We must answer, *cultivation*. But will any one say it is too high cultivation? Are those vines over-fed? The magnificent Sheldon pears exhibited on the tables by Mr. L. A. Ward—how did they become so? Was it by extreme cultivation? Does any one know of any one who has, while cultivating judiciously, cultivated a tree too highly? (Quite a pause; but no answer.) Mr. B. continued—The time is coming when such things as we now show, when such fruits as we now are proud of, will not be called good at all. There is no danger in manuring, provided the manure be well prepared, not too fresh and rank.

The subject of stocks was discussed, because there is some difficulty and danger in crossing

* *Extract from Hovey's Magazine for October.*—"It is the surplus product of these amateurs which creates so much admiration, and forms the basis of some of the almost fabulous stories of the profits of pear culture."

one tree upon another. Putting the pear upon the quince stock is not exactly a natural operation; but art is art, and must bring its ends to pass by the means of art. Horticultural art resorts to all these, and many more processes. The success of art in the horticultural field is its warrant for going further. Let those who decry horticultural skill cease to eat of the fruits thereof; let them turn from such a show of enormous and highly flavored fruits as are on our table to-day, and return to Fox grapes, Choce pears, and such other natural fruits.

Mr. Ainsworth said that the main thing, after having the land good and the trees good, was to keep it thoroughly pulverized. A horse hoe between the rows of trees, once each week during the summer, is none too often.

Grapes.—Mr. Barry spoke of the Delaware (concerning which so much has been lately said,) as very early, and perfectly hardy. Of the Rebecca as a very handsome, free grower, and bearing a fine crop; does not mildest under good treatment.

The Concord is pleasing people very much; is not so good as the Isabella; is jet black, fine flavored, and as large as the Black Hamburg.

The Hartford Prolific was shown in quantities at the Pomological Congress in New York city. Was once in Boston condemned as foxy; but has, in spite of that condemnation, been latterly more cultivated, and improves upon acquaintance. It is a large grape, bears great crops, sweet, though somewhat foxy, and upon the whole is a pretty good grape; a great recommendation is that it is so early, and such an enormous bearer.

The Diana on Mr. B.'s grounds ripens about the same time as the Rebecca.

The Delaware is much superior to the Catawba in quality, even when the Catawba is fully ripe. Had eaten the Catawba in its best and ripest state in Cincinnati, and the Delaware surpassed it, even under the most favorable circumstances.

Mr. Thomas, of Cayuga, spoke of visiting the vineyard of Dr. Farley, containing six acres. Was planted four years ago with Isabella vines at three years of age. The ground had a good slope, sufficient to drain it well; had been previously worked two feet deep, was naturally strong, but was enriched by two hundred loads of muck to the acre. In 1857 he gathered one and one half tons of grapes, which he sold at fifteen cents per pound. In 1858 he raised from seven to eight tons, for which he gets fourteen cents per pound. The vines are trained upon wire trellises fastened to cedar posts, and are pruned and trained with a great deal of skill. "Never saw a more beautiful sight than as standing at one end of the trellis, I looked along through the purple clusters hanging in such profusion, both of numbers and size: for they were large as Black Hamburgs. Many grapes I measured were eight-tenths and nine-tenths of an inch in diameter." The posts of trellis are seven to eight feet high; trellis six feet high; plants are twelve feet apart on the trellises, which are eight feet apart.

Isabella should never be less than twelve feet apart.

Mr. Ainsworth spoke of the vineyards in Bloomfield. The growers there had thus far found the Isabella the most profitable. Hopes the Society will recommend Rebecca, Delaware, and Diana, for general cultivation. The vineyard of Dr. Miner, of West Mendon Village, consists of five hundred Diana vines, which have fruited for several years. The Diana with him ripens two weeks earlier than the Isabella upon the same trellis. Last year the Diana ripened well; while the Isabella did not ripen at all. The Diana is a good wine and table grape.

Mr. A. also spoke of the vineyard of Mr. Peck; where there was a system of high cultivation carried on with refuse bones, waste from a slaughter house, &c., which system produced enormous crops. This year there was a very heavy crop, and admirably well ripened. The pruning was only medium; five leaves were left beyond the farthest bunch of grapes, balance pinched off. On the laterals the shoot was pinched off two leaves beyond the bunch. A Mr. Wilcox has two vines eleven years old, from which he is raising this year 500 pounds of grapes each. The branches cover an area of sixty feet square upon an horizontal trellis, and the bunches hang down through the trellis. The sight of these purple clusters deserves particular mention, as they are indeed a sight to behold. These vines are Isabella, and last year the fruit, although

nearly as fine as this year, did not ripen. We want a grape that will ripen its fruit in every season.

Mr. Thomas said that W. A. Underhill, of Croton Point, was decidedly opposed to high manuring upon a vineyard; but made up the difference by constant stirring of the soil. Has the cultivator go between his vines once each week during the whole summer.

Best time to transplant grape vines, Spring or Fall?

Mr. Ellwanger thought it did not make much difference; but no grape vine should be placed in a wet soil at any season.

Mr. Ainsworth thought that if the land be well subsoiled and undermined, Autumn was the best time.

Mr. Thomas asked the Society which grape would sell best; the Delaware, which is excellent in quality (in fact cannot be surpassed in flavor) but is small, or the Isabella, which is simply good in quality, but is larger.

Mr. Salter, of Rochester, answered that the great desideratum here was to have a grape that ripened early and surely. "A grape that ripens on the first of September, that is the grape that will sell." Attention is now being paid by the fruit growers to grapes, and we must have those that are early as well as good. "Some gentlemen have to-day mentioned cases where the Isabella ran into the foliage of trees, and, clinging to the southern and leeward sides of the tree, ripened its fruit earlier than on the trellises beneath. In this case, the earliness is owing to the shelter of the tree foliage; but under ordinary circumstances, the Isabella, four seasons in five, wont ripen. On my grounds, the Catawba, in a dry, warm situation, is already quite ripe, while twenty-five feet off there is not one Catawba on the vine ripe."

Mr. Salter did not think the size made any difference as to selling, provided the fruit was ripe.

Mr. Barry: very desirable to have a grape that will surely ripen. The Delaware is one of the greatest acquisitions in the grape way for amateur cultivation; will ripen where Isabella wont ripen at all; differed from Mr. Salter as to the kind that would sell. People when they buy a market grape want size. Pity that the public taste is not more refined; but we must take things as they are. A market grape should be black and large.

The Catawba is not a safe grape to plant in this county. The cultivation of the vine is a subject of the greatest importance, and the instances told here this day are sufficient to turn the attention of hundreds, yes of thousands of farmers in western New York, to the culture of the vine. Thousands of acres near us are more fit for the raising of the grape than for wheat. One of the objects of this Fruit Growers' Society, is to turn the attention of farmers and others to fruit culture.

The impetus given to grape culture by the introduction of dozens of new varieties, has been very great and no doubt will be felt very extensively. Will do great good.

Mr. Picard said that he produced from one vine last year one and a half barrels of wine, has in three years from one vine propagated 1000 vines. Anybody can raise all the vines he wants to, if he only gets a start.

In the show of fruits the display of grapes was unusually fine, especially of the early varieties Delaware, Diana, Concord, and Rebecca. Mr. Brocksbank, of Hudson, among a large assortment, exhibited Isabellas measuring three inches in circumference; also Concord as large as Isabellas usually are, and fully ripe, and very fine Hyde's Eliza.

Messrs. Bissell & Salter, of Rochester, exhibited some very fine Delawares, Dianas, and Logans.

Pears, Apples, and Peaches, were also shown of magnificent proportions, and in some respects it was the finest exhibition the society has ever had in September.

The Annual Meeting will as usual be held in the winter at Rochester. The officers are

HON. HENRY P. NORTON, of Brockport, *President*.

MR. C. P. BISSELL, of Rochester, *Secretary*.

MR. W. P. TOWNSEND, of Lockport, *Treasurer*.



EDITORS TABLE.

To Contributors and Exchanges, &c., &c.

Communications, Letters, Catalogues, Periodicals, &c., &c., intended for the perusal of the Editor, should be uniformly directed to the *HORTICULTURIST*, Germantown, (Philadelphia,) Pa. Packages by Express, &c., should be directed to the Editor, as above, by name; they will thus reach him almost beyond a doubt.

A FEW WORDS ON BUSINESS.

THE close of a volume is always an event in the history of a periodical, especially in one that depends for its support on a single, and that not a very large, though most intelligent class. To the proprietor and publisher it is a period of great interest, as from his ensuing number will date most of the new subscriptions, and he soon feels the throbbing of the public pulse by its desire or otherwise to continue the work, and bring friends and neighbors to the same conclusion.

The error that has been committed by a former publisher was in reducing the annual price from three to *two dollars*; this compels a strict economy, and there is not margin enough to admit the payment of collectors, who would be obliged to travel from Canada to California, picking up a few dollars at each town, sometimes finding the reader absent from home, and returning with a pocket emptied by expenses. Our readers understand this necessity of prepayment, and it is unnecessary to expend many words upon it, except to refer our friends to the terms as set forth in the advertisement, by which it will be seen that fifty cents will be hereafter invariably added to all subscriptions upon which payment is delayed over three months.

Whether the public will support a Journal on our topics, perfectly independent in its character, is the question they, and they only, can determine; divorced from all interests but those of truth and information, it proposes to be the medium of intercourse between the producer and the consumer, without favor or influence. It advises no grower what he shall specially devote his industry to produce, but when a good fruit or desirable plant is brought forward, it makes it known at once to general favor; a bad one it does not hesitate to denounce. The conductor endeavors to place himself in the position of an interested looker-on, as he is; observing the worker, whether encountering mental or bodily fatigue: he is anxious and ready to embody in his Journal everything that will abridge labor, and by consulting the ablest minds in each department, to distribute the concentrated knowledge of the age we live in advantageously. He would bring the producer to the acquaintance of the consumer, dig out from every progressive nation their knowledge and acquired developments; without partiality or favor, he gives to every writer who displays a talent for imparting information, a fair hearing; he has no enmities, except against ignorance and false pretension; he wishes to do a benefit to his generation, and of course cannot sanction the mere quack; the toiling millions must not knowingly be misled, and if he can by constantly perusing the best works, and examining for himself the products of industry, drive

jealous pretension into a corner, and liberate that knowledge which in every age is "slow to travel," he will be amply rewarded; he will gladly say to one, abridge this operation to save your time for something else; to another, you may be doing very well, but would not some neglected material, within your reach, do better?

There is a vast amount of intelligence now occupied in elevating labor to its true eminence, as well as in shortening the processes by which labor seeks its reward; to promulgate this is not within the scope of any single periodical. We take the garden, and the operations embraced by its surroundings,—the house no less than the grounds. The world works under disadvantages for a long period before it adopts the best modes. The steam engine lingered till genius seized its mighty powers; how long the interval, considering the intelligence abroad, between the silken string of the kite and the Atlantic Cable; we go on telling sometimes the same things that were told before, but in each department we arrive certainly, if slowly, at happy results. We are disappointed a thousand times by circumstances which were entirely unforeseen; the insect blights our hopes, and we must resort to other contrivances to attain the desired end. By cheap glass structures we can have an "orchard" under our control, leave the stinging pests outside, or smoke them away. We are all students and observers, and presently will come some master mind, who, with the wand of enchantment, will conquer the present destroyers of our fruits; but we must keep up an agitation—we must stimulate the growth of mind, awarding due praise to those who accomplish much, while we *let down* the unsuccessful with the relief that we believe they meant to do a service.

We desire to make THE HORTICULTURIST more and more *national*, and not *sectional*. We believe that the true lover of his art may derive advantage from the study of every climate and its results; the North may learn much from the South, and the Southern cultivator may impart much to the Northern. The fruits of each are to be tried in all, in doors or out, till we arrive at the truth. A local journal some may desire this to be, but it is no longer such, nor would the support accorded to it in any one region supply the means of merely printing it. The grandest results are produced from the information each one throws into the common stock. We fully appreciate the fact that our readers are not merely the *beginners*, but rather those who know much already, and are anxiously seeking to *know more*. By adapting the work in some measure to all the members of a family, the conductor is happy in knowing that a large addition of subscribers has been enlisted, and that a large increase of its *readers* has been secured. Both he and the publisher will be cheered by every encouragement, and they hope their several exertions will not be without results.

MADISON, WISCONSIN, is by all accounts a gem of a city. A friend who attended the Fruit Growers' Convention there, writes:

"Madison is indeed a beautiful place spread around and among four lovely lakes, each of which would be a gem in a European scene. Possibly you hardly imagine how unusually favorable the elegance of some of the buildings, corresponds with the newness of the city.

The location of the Fair Grounds could hardly be surpassed. From an eminence in the rear part, the whole inclosed space was overlooked, and the pleasant country on either side. From this height many of the fine public and private buildings showed distinctly out from masses of autumn foliage. The natural growth of the forest has been left for parks, and shade trees, as far as possible. In all the hurry which there must have been to accomplish so much, in so short a time in the way of architectural and other improvements, the horticultural has not been forgotten. Much taste is displayed by many of the citizens, in their surroundings. It was supposed there were some 30,000 strangers in the city; you may wonder how so many could be comfortably entertained, when only eight years ago, we thought it too new and uncivilized for our residence; too far out of the world for comfort, with not a railway, or a plankway, to get one to it with any sort of ease or speed.

We enjoyed the agreeable hospitalities of the secretary of the Society, and Editor of the Wis-

consin Farmer. We many times wished the Editor of the Horticulturist would in his many journeys, visit this north-west corner of his parish. It would at least spare one of his lady correspondents the necessity of telling him so much about it."

APPLES.—The capacity of Virginia to grow the best apples is demonstrated by the samples laid before us by Mr. Franklin Davis, of Staunton. Rarely have we seen finer specimens of the best sorts. The Fall Pippins, and Rambo, Fallawater, &c., are enormous, and very fine. The old ribbed yellow Belleflower causes reminiscences of the old times which are but too rarely recalled. If such productions can be raised in sufficient quantities for export, that fine portion of Virginia should be turned into an orchard, and fill its rail-road with fruit for the cities. The inhabitants can have no better exponent of the best kinds and the best modes of cultivation, than Mr. Davis, who is devoting his time and attention to the nursery business, in an enlightened spirit which cannot fail of success.

A WORK OF ART.—The balustrades for a stair-case in the House of Representatives, at Washington, made by Archer and Warner, of Philadelphia, have been on exhibition in Philadelphia, and we are free to say, the whole effect exceeds that of any casting we have seen. The natural productions of our country are all displayed with extraordinary exactitude, and will be admired as long as good taste exists. We congratulate the country that it has artists capable of producing such grand and magnificent results.

RASPBERRIES AND BULBS.—Mr. Andrew Bridgeman, 878 Broadway, forwarded us in October some fine plants of Bagley's Perpetual Raspberries, with the fruit upon them, but not in a state to compare them with the Catawissa, which bore until heavy frost. Bagleys we have not yet tasted, but hear from others a good account of them.

Mr. Bridgeman's bulbs are the largest and heaviest we have ever seen this country; the hyacinths and tulips are quite astonishing in these respects. By the way, from a single bulb received from Mr. B. last season, we had the pleasure of welcoming nine very handsome separate stalks of bloom!

TRAVEL.—All who have experienced the true pleasures of traveling abroad, must also have a keen perception of the gratifications of returning home. These will appreciate the just remark of a modern essayist, who says:

"Those who wish to forget painful thoughts, do well to absent themselves for a while from the ties and objects that recall them; but we can be said only to fulfil our destiny in the place that gave us birth. I should on this account like well enough to spend the whole of my life in traveling abroad, *if I could anywhere borrow another life to spend afterwards at home.*"

COURTESY. In our next number we shall publish an article on "Horticultural Courtesy."

CATALOGUES, &C., RECEIVED.—Bridgeman's Descriptive Catalogue, No. 4. Fruit and Ornamental Trees, Shrubs, Vines, &c., 1858. A well arranged and very full list of all that can be required by amateur or planter.

Catalogue of Superb Dutch Bulbous Roots, imported and for sale at Bridgeman's Horticultural Establishment, 876 and 878 Broadway, New York. These bulbs we have noticed elsewhere; they are priced in this list and cheaper than we have noticed in any other, say from eight to fifty cents for Hyacinths, and for Tulips five to twenty cents.

Catalogue of Annual, Biennial, and Perennial Flower Seeds sold at Bridgeman's 876 and 878 Broadway, New York. Ditto of Vegetable Seeds, same proprietors; both of these contain ample lists of pure seeds. We see in the last, Garlic sets, at thirty cents per pound: some gourmets will thank us for noticing the fact.

No. 7.—Keystone Nursery, P. A. Mish, Proprietor, Harrisburgh, Pa. A great list of valuable and popular fruit and shade trees, strawberries, raspberries, &c. &c. Such a nursery must be an acquisition to any neighborhood.

Catalogue des Espèces et Variétés de genres Rosiers Remontants, cultivés par François Fontaine, à Chatillon-les-Baigneux (Seine) France; Paris, 1858.

Horticultural Monthly, Morrisania, New York.

Gardener's Monthly, No. 5. South 6th Street, Philadelphia. Edited by Thomas Meehan.

Trade List of Evergreens, Fruit Trees, Stocks, &c., for 1858 and 1859, offered for sale by John Saul, Washington, D. C.

The Illustrated Annual Register of Rural Affairs, and Almanac. By J. J. Thomas, Albany and New York, Tucker and Son, and New York, C. M. Saxton. This little cheap volume contains a world of good sense, as indeed one might expect from the care of the editor. There is no farmer that would not be benefited by its perusal, and it is a convenient almanac for all.

Catalogue of Fruit and Ornamental Trees, cultivated and for sale by Peters, Harnden and Co., Atlanta, Georgia. This is the state for fruit grower's, from the nature of its soil and climate, and that it must partly supply us at the north is becoming evident; we see a demand made upon the railroads running to the Atlantic for large additions to the "fruit cars,"—a good sign. Peters, Harnden and Co., and P. J. Berckmans and Co., will not be behind any demand that may be made for the trees.

Commercial Nurseries, Saco. Apple, Pear, Plum and Cherry Trees, &c. Daniel Mahony, Practical Gardener.

Descriptive Catalogue of Vines, &c., with explanatory remarks and indications for cultivation. By C. W. Grant, Iona, near Peekskill, N. Y. A valuable pamphlet received too late for more extended notice this month: in our next we shall give some remarks on the grapes noticed, from the pen of Charles Downing. Dr. Grant has a fine stock of all the best grape vines.

Buist's Almanac and Garden Manual, Philadelphia. Like most things that the author does, this is well done, and we shall notice it again, giving Mr. B.'s long experience on the list of "best" roses, &c.

Descriptive Catalogue of Fruits, Hardy Ornamental Trees and Shrubs, &c.; Louis C. Lishy, Nashville, Tenn. A very full and valuable list.

Other Catalogues were received too late.

ANSWERS TO CORRESPONDENTS.

CAMELLIAS IN A DRAWING-ROOM (Alice).—A drawing-room is about the worst room for a camellia to be in, when it is in blossom, or in blossom bud. The camellia is an "evergreen," and the roots of evergreens are not so active or so excitable as the roots of other plants; therefore when an evergreen is kept in a warm, comfortable room, the dry, warm air in the room excites the plant or the leaves, flowers, and buds of the plant, faster than is natural for the roots. The roots might, therefore, be immersed in water, and yet the plant want for water at the same time. It is, consequently, essential that blooming camellias, in warm living-rooms, should be constantly and abundantly supplied with water all the time; and they stand in need of rest and refreshment as much and as often as the other inhabitants of drawing-rooms, who may be exercised beyond their powers, at routs, balls, and all the rest of gayeties. The way to rest a camellia in bloom is to put it for so many hours into a much cooler room than a drawing-room; and the way to refresh it is to allow it to breathe the cool night air as long as it is above the freezing point, and not in a "draught." Not that frosty air in motion is hurtful to the camellia itself, but that the delicacy of the flowers cannot hold up against it with impunity. Those who cannot sleep a "wink" if they retire early to rest, and who keep blooming camellias in the drawing-room, ought to ring every night about half-past ten, to have the camellias taken to "their own room," where they should rest and be refreshed till the drawing-room was "dusted and put to rights" the next day. With that attention, no inmate of the drawing-room will look more fair, or more free and cheerful than the camellia.

STRAWBERRIES. "CULTIVATOR."—Yes; our plate of strawberries is not exaggerated as to their size. They were drawn from nature, neither the largest nor smallest were taken, but a fair average; the artist was to "nothing exaggerate, nor set down aught in malice!"

S.—Your last plant is a *Dolichos*, but beyond that we cannot go without further information.

MRS. E. BAKER, Alleghany Furnace, Pa. The mildew on the leaves of rose bushes can only be attacked by sulphur. Apply it as directed for grape vines, that is, sprinkle or blow it on to the diseased part, repeating it occasionally till the mildew has disappeared.

OHIOENSIS. Yes; we have a high opinion of the artichoke as a root crop. It is very productive and useful as food for the horse and the hog. It is said they can be raised for four cents a bushel!

IN the October number, Wilson's Albany Seedling Strawberry was stated to be pistillate. This is an error, as it is a true staminate.

Erratum. On page 544 of present number, line 14, "fears" should read "pears," and in the last line of the article "something" should have been printed "sometimes." The delays of the post office prevented these corrections.

GOSSIP.

THE CLOTH MOTHS, (*Tinea pillonetta*), deserve to be celebrated on account of their interesting proceedings. They are born naked, but immediately think of clothing themselves, thinking nothing of colors. They are little cylindrical worms, which make themselves muffs exactly the shape of their bodies, and open on one end. The stuff is manufactured by the insect itself, and consists of silk of its own furnishing, and the detritus of the cloth on which it feeds, and out of which it makes its dress. When its covering is completed, it lines the interior in immediate contact with its skin, with very soft silk; it never puts on a new dress, but, as it grows, it adds to the old one. This is easily lengthened by adding some of the same material at each end; but to make the coat fit, when the body grows broader, is a more complex affair. This it does by slitting open the cylinder half way down, first on one side and then on the other, and connecting the parts thus let out by very ingeniously adding new pieces, which are sutured on to the old by means of silk, of which the little creature keeps a constant supply. If a *Tinea* which has fed on red cloth for a time, be put upon blue, the sutures will be blue, and he will appear in a short time in a party-colored dress.

IN very many cases fruit trees are planted in the natural soil, perhaps with a superabundance of manure; no preparation precautionary against the descent of the roots into a most ungenial subsoil has been made, and the consequences have been what we find everywhere in the case of tender fruits—an annually occurring immaturity, which, of course, becomes accumulative. And what must be the consequences of heedless planting on soils which receive the solar heat, as it were with reluctance? Why, late growths, and, of course, immaturity, nakedness in portions of the limbs or branches, and barren fruit spurs, which, being only half organized, blossom in a future spring only to deceive. Drainage in soils of a hard, clayey character, and large holes for the trees with a mixture of manure and top soil, is the remedy.

PINUS WINCESTERIANA is the name of a new pine cultivated in England, from near Tehic in Mexico. It is remarkable for its long incurved resinous cones, and is very distinct from any heretofore described; the leaves are in fives. Forty-three species of rhododendrons were discovered by Dr. Hooker in the Sikkim Himalaya Mountains, and yet Mr. Booth shortly afterwards discovered sixteen more.

It is only when climbing roses as pillar roses have been fully established, and have nearly filled their places that pruning can, or ought to be, dispensed with, in a great measure; that is, an *annual* cutting back of all shoots; but all plants in cultivation, from a forest of oaks, to a bed of mignonette, require to be thinned more or less occasionally, and so must all roses.

THE pigeons recently employed in carrying messages are not the kind called "carriers," but those crossed between a dragon and a tumbler, and are called *skinnums*. Another error consists in the supposition that birds can carry letters of the ordinary size tied under the wing—a fatal hinderance to their flight. When messages are sent by them they must be written on a narrow strip of thin paper, say three inches by three quarters of an inch, rolled round the shank of the leg, and secured by a thread. In flight the foot is drawn up into the feathers, and no resistance is offered to the passage of the bird through the air.

YUCCA GLORIOSA.—This fine, tropical-looking plant is not half so much patronized, as it deserves to be; for, independent of the rigid, uniform appearance its foliage always presents, no flowering plant, that we are acquainted with, can equal it for length of spike and number of florets expanded at one time. It is true, they do not flower well in every situation; but, where they do succeed, no plant of late introduction gives so distinct a feature as this yucca. The *yucca gloriosa* is, perhaps, of the yuccas, most highly esteemed, and a finer object when in blossom, can hardly be conceived. It is majestic, bold, and even grand. It is a common remark that every plant is a weed in its own country; but it would be hard to call this a weed, although we meet with a forest of them. Wherever it is desirable to impress an exotic character, wherever what is called "sentinels" are needed, and near to buildings of any kind, there the yucca will be found at home. The Irish yew is another most distinct and significant tree, wherever stiff formality or deep contrast is required. And then its color is so good; perhaps one of the darkest shades of green we possess.

WITHOUT trying some experiments, what is the real use of a garden at all? The best gardeners in the country, try experiments every week of their lives, and, at the end of the longest life, one only begins to see how much more there is to do and to learn. The only secret about experiments which amateurs should know, is this—Never to depend on the issue of an experiment; make sure of your crop or bed, or anything in hand, and let your experiments be extra.

THE most inexperienced fruit grower may soon rival and outshine the most successful of old practitioners, if he will only give himself the trouble to thoroughly understand and execute two facts well ascertained and fully established. First, that extreme luxuriance in growth, and extreme fertility in fruit, are entirely antagonistic to each other. The second, which is only a repetition or modification of the first, is, that the rapid luxuriant production of timber, and the early production of well-flavored fruit, are most easily and thoroughly secured, by the roots being placed in circumstances entirely different; depth of soil, moisture, and richness, being not more necessary in one case, than comparative shallowness, dryness, and soil unstuffed with rank manure, in the other.

Notes for the Month.

VINEYARD CALENDAR FOR NOVEMBER.

BY R. BUCHANAN, CINCINNATI, OHIO.

December and the two succeeding months afford but little employment for the vinedresser, except pruning the vines in pleasant weather, sharpening stakes, mending walls or trellises, or such work as can be done now, to lessen the labors that press upon us with the opening of Spring. The vines are pruned as heretofore directed, and the branches brought into the house, or cellar, to be cut up into proper lengths for planting, in slips, or cuttings, and the refuse used

to feed the fire, or to put into ravines to prevent washing out the soil. These cuttings are prepared in wet days, or in wet evenings, to economize time. They are tied in bundles of 100 or 200, with willow ties, and kept in a cool, damp cellar, or set on the ends in the earth, to keep them fresh. The young shoots from the yellow willow may now be cut from the tree, tied up in bundles, and placed in the cellar until wanted for use. *The wine casks* will merely be required to be kept bung full, and tight.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

ORCHARD HOUSES.—The culture of fruit trees in plots has recently been on the increase, and there is reason to believe that it will become a favorite and remunerative system. Taking into consideration the climate, and other casualties, which render out-door culture of fruit a matter of considerable uncertainty—such as the mildew on the grape and gooseberry; the cracking of the pear, and frequent destruction of its blossoms; the curculio on the plum, nectarine, and apricot; the yellows, borer, and leaf blister on the peach—any means by which a moderate but certain continuation of crops can be secured, will demand attention.

Growing fruit in pots is no new idea, but it has only recently been reduced to a system. The orchard houses introduced by Mr. Rivers in England have been the means of concentrating attention to this subject, and these structures have there been rapidly increasing, and from all accounts are proving entirely satisfactory when properly managed.

The difference between these orchard houses and common green-houses, is, that in the latter the pots or tubs containing the plants are set on shelves and stagings; whereas in the fruit house they are set on a bed of soil. Much of the success attending the system depends upon this management. It is well known that barrenness in fruit trees is very frequently occasioned by excessive vigor of growth; consequently the expedient of grafting upon stocks of weaker growth has been successfully resorted to,—the pear on the quince, and the cherry on the mahaleb, are examples. In pot culture, the same object is gained by curtailing root extension; which, of course, exerts a similar influence on the growth of the branches, favorable to the production of fruit buds. Having secured flower buds, there is no difficulty, under a glass roof, of expanding the blossoms, and under the protection thus afforded, almost every flower will set a fruit.

In pots, a heavy crop cannot be maintained without extra nourishment, and here the practice of placing the pot on a bed of enriched soil meets the difficulty; ample means being allowed for the roots to protrude through the bottom of the pot, they will extend into, and derive nourishment from the soil below, and the plant will mature a comparatively heavy crop.

To ensure maturation of the wood and a continuation of fruitfulness, growth may be checked by simply twisting the pot so as to disarrange the roots. They may be all cut away and the pot removed, if the growth is sufficiently advanced; but a gradual stoppage of root growth will, in general, be the safest mode of proceeding.

The most economical form of house for the above purpose, is that which allows the greatest surface area. Low roofs are indispensable, and possibly the horizontal ridge and furrow method may ultimately become prevalent.

Much, however, can be done in a green-house. After the plants are turned out for the summer, it may then be turned into a fruit house, and rendered both profitable and attractive.

A stock of trees in pots may be kept on hand, wintered in a cellar, or any equally suitable place, removed to the open air early in Spring, and introduced to the greenhouse after the flowering plants are taken out. We have seen fine crops in this way. They may be assisted by the application of liquid manure when ripening. Fruits from pots are generally superior in quality to those from open air culture.

At the close of a volume, seems a fitting occasion to make a few remarks upon the necessity of combining science with our practical operations, and urgently enforcing the necessity of studying the principles of vegetable philosophy—the relation that the agents of vegetation bear to each other, and in combination to plants. We can seldom look into the pages of any horticultural or agricultural periodical, without perceiving many discrepancies, contradictory assertions, false conclusions, and absurd reasonings, which the writers would never have penned had they been, in the slightest degree, conversant with the simple chemical rules which regulate the growth of plants.

The difficulty in establishing rules of practice that would be uniformly successful, arises from the varied action of the agents in vegetation, and their individual modification under different circumstances. Hence the paramount necessity of cultivators informing themselves of the theory of action among these agents, so that they may decide upon a course of practice suited to the circumstances by which they are surrounded.

The most instructive elementary works on these subjects are Lindley's "Theory of Horticulture," Carpenter's "Vegetable Physiology," Liebig's "Agricultural Chemistry," Johnson's "Lectures on Agricultural Chemistry," and Chaptal's "Chemistry applied to Agriculture."

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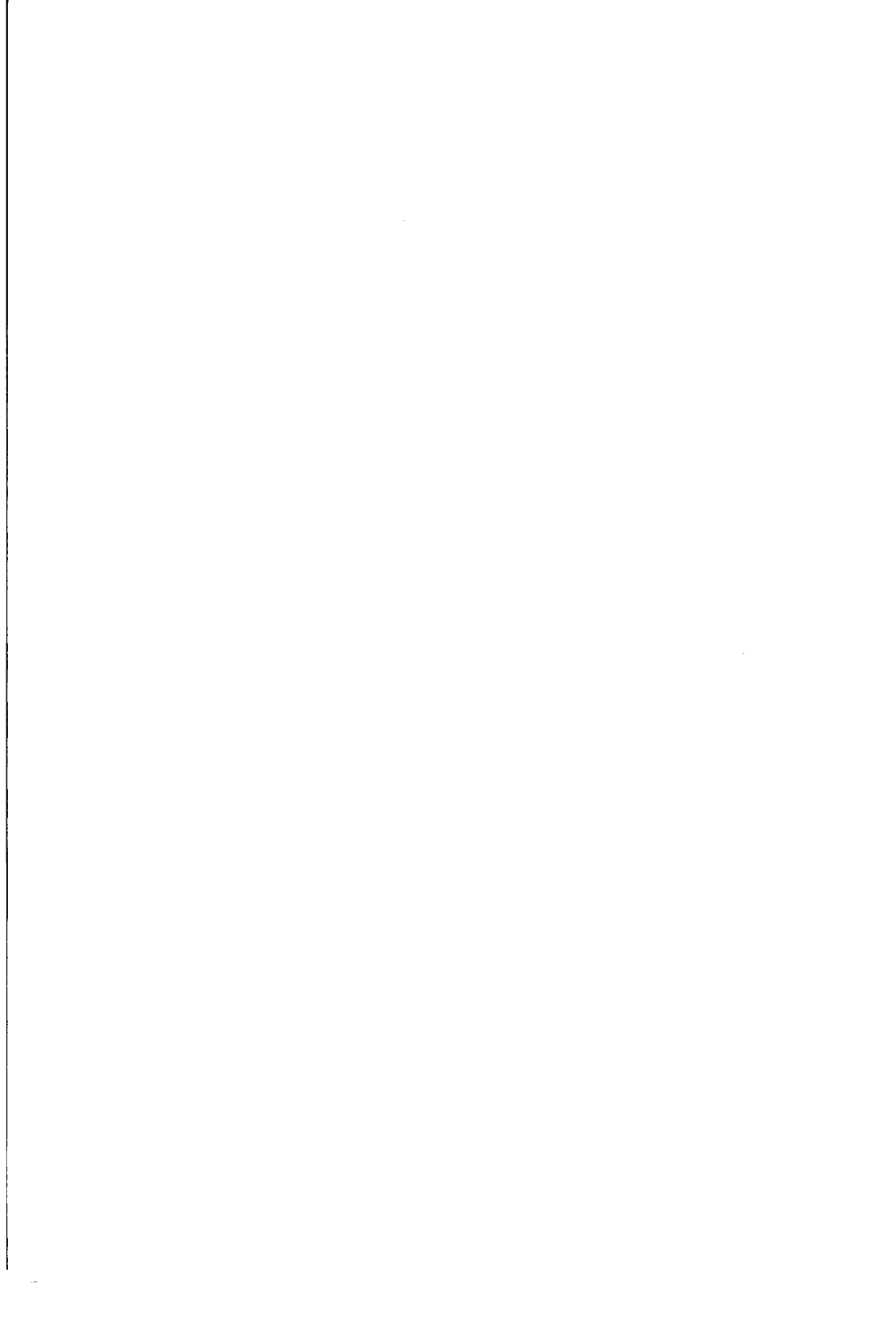
ILLUSTRATIONS.

LIST OF PLATES.

	Frontispiece to	January number.
Julien Apple,	do.	February do.
Downing's Everbearing Mulberry,	do.	March do.
A Group of Summer Fruit,	do.	April do.
Watsonia Iridifolia, var. Fulgens,	do.	May do.
Cone of Pinus Lambertiana,	do.	June do.
Wistaria Frutescens Magnifica,	do.	July do.
Bachelor Apple,	do.	August do.
Kingsessing Pear,	do.	September do.
Bumelia Lycioides,	do.	October do.
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Fondante de Malines Pear,	do.	December do.
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